

THE STEWARDSHIP PERFORMANCE OF FORMS OF PRIVATISED WATER INFRASTRUCTURE

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Abstract

We increasingly rely on forms of privatisation to provide networked infrastructures critical to the functioning of our communities yet some of those infrastructures fail to meet community expectations and their contractual relationships are characterised by disputation and the dominant behaviour of the private company is self-interest. Reconfiguration of the contractual relationships may achieve stewardship of the infrastructure. Many forms of privatisation rely on the Agency Theory perspective of organisations and individuals as motivated solely by self-interest. Yet it is highly likely that in the modern organisation-as-agent context Agency Theory assumptions are no longer relevant and are contributing to contractual relationships which do not deliver stewardship. Stewardship Theory offers the possibility of informing the configuration of contractual relationships which minimise self-interest and achieve stewardship.

However, this line of enquiry is limited by the underdeveloped state of Stewardship Theory (Davis et al., 1997; Hernandez 2012; Van Slyke 2007) which leaves unanswered several key questions. A full understanding of what constitutes stewardship behaviour of an organisation, the importance of sense of responsibility on the part of the steward to stewardship being achieved, and the capability of typical forms of privatisation to steward critical infrastructures has not been provided in the literature to date. To develop better understanding of these key issues this thesis ‘unpacked’ case studies drawn from the Australian urban water sector as examples of privatisation.

The research produced a number of findings. First, it provided empirical evidence that the alliance, joint venture and Build-Own-Operate-Transfer (BOOT) concession forms of privatisation achieved stewardship of the infrastructure. Second, Agency Theory was expanded as a result of findings in relation to how the assumptions as to goal divergence, information asymmetry, the agent being risk averse and agency loss function in the context of modern inter-organisational principal–steward relationships. Third, the essential Stewardship Theory tenet of the steward acting in the interests of the principal (Davis et al., 1997) was developed by a detailed explication of component behaviours and by defining the behaviour

reasonably expected of an organisation as steward. However, the evidence was that the agents in the contractual relationships configured in accordance with the Agency Theory model prescribed by Eisenhardt (1989) displayed the stewardship-like behaviour of acting in the interests of the principal. In addition those contractual relationships configured in accordance with Agency Theory were found to support and promote the Stewardship Theory pro-stewardship attribute sense of responsibility to the principal, thereby expanding both Agency Theory and Stewardship Theory. Finally, this thesis identified a significant body of actions and factors which, together with their practical application in these developments of the theory and literature, will assist practitioners to achieve better stewardship of critical infrastructures.

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List of Abbreviations

AB	Alliance Board
ADWG	<i>Australian Drinking Water Guidelines 2004</i>
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ADWG	<i>Australian Drinking Water Guidelines 2004</i>
BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
BOT	Build-Operate-Transfer
ESC	Essential Services Commission
JGB	Joint Governance Board
KPI	Key Performance Indicator
M&E	Mechanical and Electrical
NDPB	Non-departmental Public Body
NPM	New Public Management
O&M	Operations and maintenance
PPP	Public-Private Partnerships
ROT	Rehabilitate-Own-Transfer
SCI	Statement of Corporate Intent
Three Es	Efficiency, Effectiveness and Economy

Statement of Original Authorship

The work contained in this thesis has not been previously submitted for a degree or diploma at any other higher education institution. To the best of my knowledge and belief, this thesis does not contain material previously published or written by another person, except where due reference is made.

Signature: QUT Verified Signature

Date: 15 September 2013

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This thesis is the most visible evidence of my personal journey to understand how government can ensure that the best possible service is delivered to the community. As a government employee I have delivered services through the private sector and this thesis focused on achieving the best possible delivery from privatised infrastructures, allowing me to contribute and develop. That journey has been given breath and been fuelled by the support of my wife Kerri and my many fabulous supervisors.

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Chapter 1: Safeguarding our future

1.1 INTRODUCTION

Governments increasingly rely on the private sector to construct, operate, maintain and own public infrastructure. In Australia, some of these privatisations have been successful whilst others have not. In *The Age* it was reported that the privately operated, government-owned Melbourne metropolitan railway system was failing to run scheduled services (PPPs: plans, PR, procrastination, *The Age*, 2009, January 15, p. 10). In May 2010 it was revealed that the new operator was being paid \$180m more than the previous operator and was running more late trains than that previous operator (Lucas, 2010, May 5). In March 2012 in an Orwellian rewriting of timetables Metro trains announced “journey times have been revised to reflect actual journey times ... this will significantly reduce the instance of late running trains ...” (Carey, 2012a, March 7). Notwithstanding, under the banner *Dozens of trains diverted each day*, *The Age* reported that in May 2012 only 90.7% of trains ran on schedule (Carey, 2012b, June 8) resulting in continuing embarrassment for the Victorian Government.

In 1999 the State of Victoria leased the non-metropolitan intrastate rail network to a private company for a total of \$160.1m. The lease for a term of 45 years did not require the lessee to maintain the network other than for the last five years of the lease. There was minimum maintenance on freight lines and some other lines were allowed to fall out of service. The government received severe criticism in respect of the negative impact on the movement of grain to port and its inability to run its fast-rail passenger trains at the intended speed. The inadequate maintenance of the privatised rail system led to ridicule, for example *The Age* newspaper under the banner *Slow trains to rule on regional rail* observed that there would be a 3.5 minute improvement in the 62 minute journey between Geelong and Melbourne from the “bungled rail project” which was alleged to cost “\$750 million compared to initial estimates of \$80 million” (Gray, 2004, December 24). In 2007, to achieve adequate maintenance and foster the use of the rail system by the broader freight industry the government bought back the lease for an announced price of \$138m. In June 2009, the Auditor-General found that the full cost of the buy-back was likely to be \$214m.

The departments involved ignored advice from external consultants to obtain a formal and unrestricted business evaluation despite there being clear indications that the market value was below the book value (Victorian Auditor-General's Office [VAGO], 2009) and thus below the state's acquisition cost.

The South Australian Government in September 2009 lodged a claim in the South Australian Supreme Court against United Water, its contractor for the City of Adelaide's water services, alleging that the contractor had overcharged "tens of millions of dollars" for services (Owen & Lower, 2009, September 1). United Water filed a counter claim. In December 2009 the Supreme Court chastised the Treasurer for public statements which were incorrect (Lower, 2009, September 22, December 16), severely embarrassing the government. The contract reached its end date and a public tender resulted in the work being awarded to another party. The dispute was ultimately settled in September 2012, when United Water made a payment of \$6.1m to the South Australian Government on the basis of "no admission of liability" (Australian Broadcasting Commission [ABC], 2012, September 14).

All these infrastructures were previously owned and operated by government. The public expects that government continue to steward each critical infrastructure; that is, to operate it well now, and to meet future needs. It seems these troubled privatisations are sending a message to governments that as stewards for critical infrastructure they must ensure that the agents they appoint by way of privatisations also act as stewards for the infrastructure.

Privatisation as a pillar of New Public Management (NPM) (Hood, 1995; Kettle, 1997) had been seen as a masterstroke, recruiting private capital to resolve the widespread public funding shortfall, achieving efficiency, effectiveness and economy, and transferring risk from the state to the private sector (Hodge & Greve, 2007; Pollitt & Bouckaert, 2004). For some privatisations the commercial risks have been well managed but political and governance risks appear to have increased (Hodge & Greve, 2007), together with a corresponding increase in the average cost of service provision (Quiggin, 2005). Funnell, Jupe and Andrew (2009) concluded that "... ultimate responsibility for providing high-quality essential services will always remain with government. The conclusive, irrevocable transfer of operational and financial risk to the private sector for many services...is a fictitious impossibility" (p.10). Privatisation has achieved many economic and efficiency

objectives but in some arenas has failed to meet social expectations and has proven to not be fully transferable across sectors. At the extreme, privatisation of networked infrastructure creates ‘splintering urbanism’ (Graham & Marvin, 2001) undermining universal access to basic services such as water and providing premium infrastructure to the few.

The Australian public has become accustomed to government being the provider and steward of infrastructure that is critical to the functioning of the community since the first colonial settlements (Aitkin & Jinks, 1982; Connell, 1977). This reliance upon governments to provide critical infrastructure continued until the current wave of privatisations which commenced in the 1980s. Not surprisingly, despite government divesting itself of many roles which it traditionally performed, citizens continue to hold governments accountable for critical infrastructure in the same way they require government to ensure a satisfactory outcome from privatised institutions. For example, Boston, McLeay, Roberts, and Levine (1996), commenting on privatised New Zealand hospitals, noted that the public continued to align their expectations with government rather than the private sector providers which had been contracted to deliver the hospital services. Governments are at political risk as communities hold them accountable for the infrastructure meeting the values held by the public, for example efficiency and environmental quality. Any suggestion that NPM initiatives (including privatisation) can radically depoliticise public administration disregards evidence that the public often continues to see the political authority as responsible (Pollitt & Bouckaert, 2004). In short, despite government believing that risks associated with the privatised infrastructure have been passed over to the private sector, the public generally continues to hold government accountable for critical public infrastructure. In addition, there will be some privatisations where the private party has not acted in the interests of the government or the public and for those the government will be held accountable by the public. The problem then is how to configure the contractual relationship to replace any motivation of self-interest on the part of the private company with motivation to act in the interest of the government, ultimately achieving stewardship of the infrastructures and benefiting both the public and the government.

The level of stewardship currently achieved may be restricted by the current forms of contractual relationships in place for privatised public infrastructures.

These relationships reflect the ideology in vogue when they were formed and the consequent limitations of their principal–agent relationships based on Agency Theory. Agency Theory initially focused on contractual relationships between buyers and sellers (Waterman & Meier, 1998) to address the problem of parties in the agency relationship having conflicting goals and differing attitudes to risk (Jensen & Meckling, 1976). Agency Theory took the perspective that the agent cannot be trusted and prescribed control by managers, or in the case of managers, by a board (Muth & Donaldson, 1998). Many of the current forms of contractual relationships for privatised infrastructure reflect the largely economic rationalist NPM reforms of the 1980s and 1990s. The reforms were introduced to overcome growing fiscal concerns and to satisfy the prevailing ideology that the market was best suited to act in the interests of the public, with the state being relegated to the role of provider of last resort (Funnell et al., 2009, pp. 21-27). The reforms within the public sector can best be described as “managerial innovation” (Argy, 2001, p. 66) where public sector managers were given a set of commercial objectives and the flexibility to use whatever management techniques they chose to achieve those objectives. Whilst NPM reforms sought to bring efficiency, effectiveness and economy to service provision their focus on the self-interest of the individual organisation (Denhardt & Denhardt, 2007) has led to rent-seeking and opportunism on the part of some private infrastructure operators, resulting in public values such as affordability and quality of services not being satisfied. The practice of establishing principal–agent relationships in accordance with the normative assumptions of an agent as having goal conflict with the principal and being intent upon acting opportunistically (Waterman & Meier, 1998) has led to the infrastructure governance landscape being characterised by traditional contracts which are incomplete and adversarial (Walker & Hampson, 2003; Rahman & Kumaraswamy, 2004; Keast, Waterhouse, Brown, & Mandell, 2005). Agency Theory has been recognised as inflexible and narrowly focused on control of the agent, ignoring possible collective and pro-organisational behaviours of agents (Jensen & Meckling, 1976). Agency Theory assumptions such as goal divergence and information asymmetry, the risk appetite of the parties and the concept of agency loss (Davis, Schoorman & Donaldson, 1997; Eisenhardt, 1989) are highly likely to be incorrect, especially in the context of privatised critical infrastructures. If such incorrect assumptions exist within the contractual relationship for privatised infrastructure services then the contractual expectations

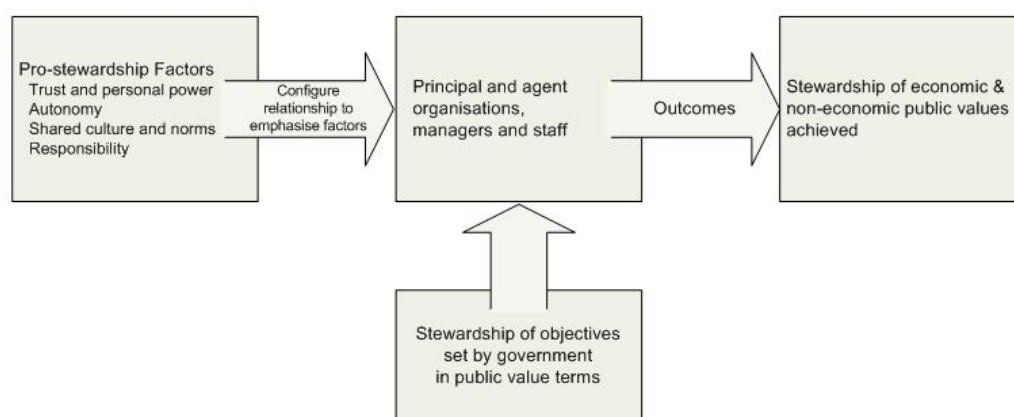
and any expectation that the agent will protect and advance the interests of the principal will be unnecessarily limited. This limited perspective would result in there not being stewardship of the infrastructure i.e. the communications network or water system not being operated to the appropriate standard and not being maintained to meet evolving community needs.

To cope with the experience of opportunistic behaviour the ‘managerial innovation’ thread of reforms within NPM (Argy, 2001) has engendered extensive innovation. The traditional contract has been replaced by relational contracts such as the Public-Private Partnership (PPP), or with innovative contractual arrangements such as Build-Own-Operate-Transfer (BOOT) and Build-Own-Operate (BOO) where the private sector alone provides and operates the infrastructure. In these contractual forms stronger alignment of financial and human resources of all parties with goals stipulated in terms of outcomes is utilised to limit the inherent opportunism. Authentic dialogue and inter-sector collaboration is introduced to leverage private capital investment (Quiggin, 2005) and to provide government access to scarce market sector expertise (Hodge & Greve, 2007). Beyond those infrastructure construction initiatives, collaboration is widely employed as a mechanism linking within and across organisations and sectors, underpinning what has been characterised as ‘boundaryless’ or ‘network’ or ‘hybrid’ arrangements (Grimshaw, Vincent & Willmott, 2002; Keast, Mandell, & Brown, 2006). These new, more horizontal, governance arrangements provide increased opportunities for coordinated service delivery, innovation and reduced costs (Klijn, Edelenbos, & Steijn, 2008; Koppenjan, 2005; Wettenhall, 2008). The emphasis on collaboration and the collective interest challenges the immutability of the Agency Theory conceptualisation of the contractual relationship being in a continual state of tension, fuelled by self-interest and the relentless divergence of goals.

This thesis explores whether this model of motivation by self-interest can be reconfigured by the application of a theory which builds on Agency Theory and which provides a perspective as to how a better stewardship outcome can be achieved. Dissatisfaction with the inflexibility and narrow focus of Agency Theory (Jensen & Meckling, 1976) led to the progressive development of Stewardship Theory around the framework offered by Agency Theory. Stewardship Theory emphasises a range of factors that are argued to result in the steward having a sense

of responsibility to the principal, and acting in the interests of the principal even where the interests of the steward and principal are not fully aligned (Davis et al., 1997; Donaldson & Davis, 1991; Van Slyke, 2007). In that way the Agency Theory perspective of the agent being motivated by self-interest is squarely overlayed or replaced by the perspective of the agent/steward being strongly motivated to act in the interests of the principal. This perspective that the agent will act in the interests of the principal can be applied to the configuration of the principal–agent relationship by a principal who seeks to achieve stewardship. The factors — trust and personal power, autonomy, shared culture and norms, and responsibility — are collectively referred to throughout this thesis as ‘pro-stewardship’ factors. This link between the emphasis upon pro-stewardship factors and a better stewardship outcome is illustrated in Figure 1.1.

Figure 1.1: Conceptual model: Pro-stewardship factors and stewardship outcome



As indicated in Figure 1.1 the central, key assumption is that if government wants to minimise its political risk and satisfy the values held by the community then it must set the objectives of the critical infrastructure in terms of those public values. In that way satisfaction of the public values attaching to an infrastructure (e.g. quality of services and accessibility, which are the goals of the government) constitutes the achievement of stewardship. Stewardship Theory contends that if the pro-

stewardship factors (e.g. trust or responsibility) are designed into the relationship between the principal and agent then stewardship will be achieved. The concept in Figure 1.1 contrasts with the present situation where many critical infrastructures are operated to pursue only economic objectives and where the relationship is characterised by control, distrust and goal divergence.

The research to date as to the scope and impact of pro-stewardship factors is underdeveloped. The most recent significant works in this area are the milestone achieved by Van Slyke (2007) in the assembly of all available Stewardship Theory literature and the model of structural and psychological factors which are the antecedents of stewardship formed by Hernandez (2012) which identified several of the pro-stewardship factors. The pro-stewardship factors have not been the focus of the literature to date, resulting in the meaning of the factors and the importance of each factor to the achievement of stewardship being very unclear. To further investigate the importance of the factors this thesis then had recourse to the broader body of literature such as Contract Law, Stakeholder Theory, Organisational Theory, and Organisational Culture. That larger body of literature assisted in better defining each factor, but the impact of each factor on the achievement of stewardship still remains unclear in the following ways:

- the possible likely impact of the individual factor upon an agent acting as a steward varied widely;
- several factors were the antecedents of other factors but not the sole cause of the other factors suggesting that one factor may be preeminent or a higher-order factor;
- ‘sense of responsibility’ on the part of the agent/steward emerged as a higher-order factor but its precise impact on stewardship remained unclear;
- it is possible that sense of responsibility is essential to stewardship; and
- sense of responsibility offers the possibility of being the attribute which distinguishes an agent from a steward.

Understanding the impact of sense of responsibility may amount to the identification of the attribute which, if possessed by an agent or steward, would be highly likely to lead to stewardship being achieved. If such a key indicator of the likelihood of stewardship was available then those seeking to achieve stewardship through others could adopt the attribute as a mandatory criteria for selection of individuals or organisations.

Put simply, this thesis contends that there is a strong possibility that the inadequate performance of some privatised critical infrastructures can be improved by the application of Stewardship Theory prescriptions. If those prescriptions were applied in the configuration of the contractual relationship between government as principal and private companies as agents then it is highly likely that stewardship of the infrastructures will be achieved. Key to the confirmation of this contention is firstly testing the core Stewardship Theory tenet that a steward will act in the interests of the principal, even where the interests of the steward and principal are not aligned. If that tenet is confirmed, then testing can proceed to explore the link between sense of responsibility and the achievement of stewardship.

The following areas within the literature require further exploration and development of theory:

- the inflexibility and narrow focus of Agency Theory (Jensen & Meckling, 1976);
- the likely out-dated Agency Theory assumptions of goal divergence, information asymmetry favouring the agent, that the agent is risk-averse, and agency loss, which have not been addressed since the work of Davis, Schoorman and Donaldson (1997), Donaldson (1990) and Eisenhardt (1989);
- the operation of stewardship behaviour at the inter-organisational level, which other than the work of Van Slyke (2007) has not been explored;
- private, for-profit organisations behaving as would a steward;

- the importance of sense of responsibility to stewardship being achieved which, notwithstanding the work of Davis et al., (1997), Dicke (2002) and Hernandez (2012), is underdeveloped; and
- the actions which maximise sense of responsibility of the organisation as steward in the literature (Hernandez, 2012) have focused on developing the commitment of the individual.

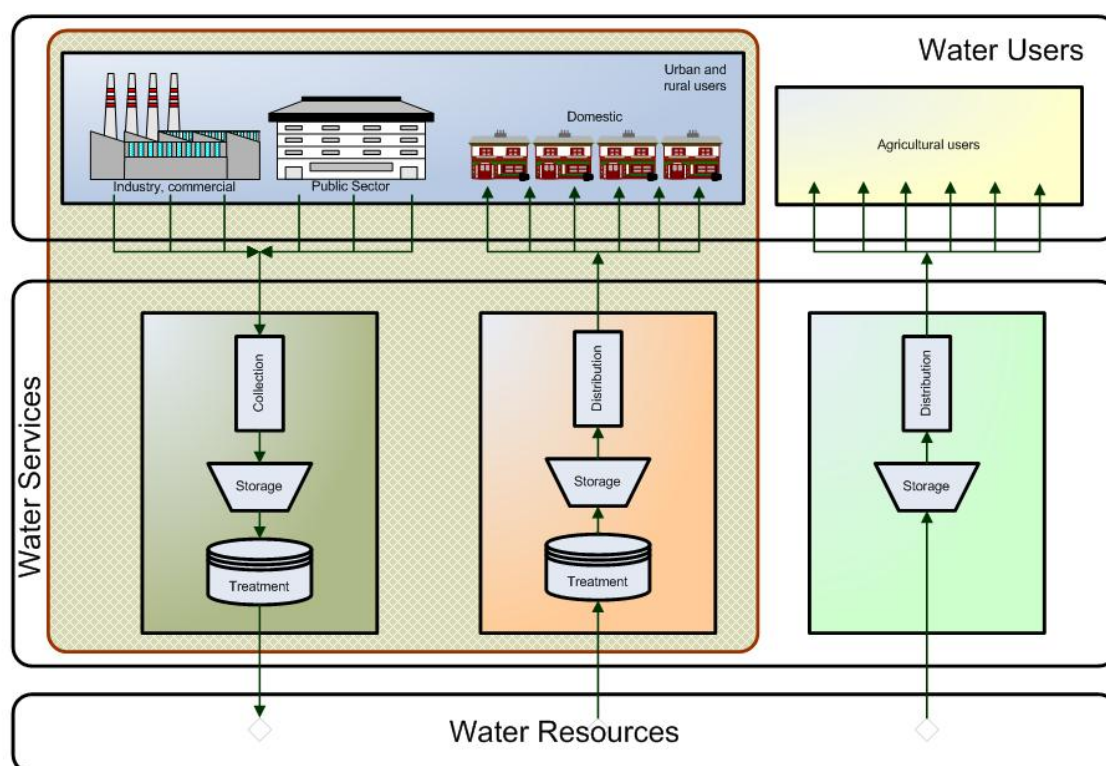
Infrastructure as an economic driver and social requirement is highly important. In Australia across all levels of government there are built environment assets with a replacement value of \$371b and an annual maintenance expenditure of \$18b (AAMCoG, 2008, p.1). If research could address and resolve the underdeveloped aspects of Stewardship Theory then it is highly possible that forms of contractual relationships which apply Stewardship Theory can be constructed to achieve better outcomes from this infrastructure. To achieve clarification of Stewardship Theory tenets, to understand the possible operation of limitations inherent in Agency Theory-based relationships and to gain understanding of the forms of contractual relationships which do achieve stewardship of privatised infrastructure services, evidence will be gathered through case studies. So that the findings from that evidence be as transferable as possible it is highly desirable that the case studies have the following characteristics: substantial privatisation of the infrastructures, long-term relationships to increase the likelihood of sufficient secondary data and experience of one party with the other, no significant variable as to the specifications of the infrastructures, and commonality between case studies as to the prevailing public values.

The urban water services sector (drinking water and sewerage) presents as a suitable candidate industry from which to draw case studies. The sector is subject to a range of similar forms of privatisation (Rees, 1998) and contracts are typically long-term (providing long-term relationships rich in historical data for longitudinal comparisons). In addition, the sector comprises similar infrastructure and its outputs have quality standards which are highly specific, measurable and published publicly (Funnell et al., 2009; Rees, 1998). Importantly, reticulation of drinking water and removal of waste water is fundamental to the functioning of urban societies anywhere (Graham & Marvin, 2001), suggesting a high probability of consistency of

public values across case studies. The relative constancy and mix of these variables will assist in maximising the validity of the results.

The role of government in the supply of water services and the prospect of government disengaging from water services remains controversial. Prasad (2006), when reviewing the results of private sector participation in water services, found that across countries there is general consensus among policy-makers and experts that governments should disengage from utilities such as telecommunications and electricity, yet water is seen as unavoidably social in nature. Prasad (2006) contends that water “evokes political emotions like no other issue” (p. 669). However, governments have achieved no respite from the pressures which have led to the privatisation of their other services leaving government-operated water services increasingly open to privatisation. For those reasons research into privatised water services is likely to be highly valued by scholars, government and industry. These water services are depicted diagrammatically in Figure 1.2.

Figure 1.2 Overview of the provision of water services



Source: Schouten Schwartz (2005, p. 4).

The scope of the empirical research in this thesis does not extend to water for agricultural users, but rather concentrates on the urban and rural water services as depicted by the shadowed part of the diagram, applying to industry, commercial, public sector and domestic users.

Put simply, Stewardship Theory promises that if relationships between principal and agent were configured in accordance with Stewardship Theory then better stewardship of critical infrastructures would be achieved. Such promises have not been proven. Utilising case studies drawn from the urban water sector this thesis sought to answer the following questions:

- RQ 1:** *To what extent will a steward act in the interests of the principal?*
- RQ 2:** *How important is it that the steward feels a sense of responsibility to the principal for the steward to act in the interests of the principal?*
- RQ 3:** *What actions are available to the principal to increase the steward's sense of responsibility and achieve stewardship of critical infrastructures?*

This thesis is structured with the objective of understanding whether aspects of Agency Theory can be updated and whether Stewardship Theory can assist in developing a better way to configure the relationships between government (the principal) and private entities (agents or stewards) which operate privatised critical infrastructures. The next chapter, *Literature Review*, presents the concepts of privatisation, stewardship expectations and the stewardship of public values, and then explores the limitations of Agency Theory and the capacity of Stewardship Theory to address those limitations.

The third chapter, *Literature — Infrastructure Privatisation*, examines the key typical forms of privatised contractual relationships and then explores the suitability of urban water systems of Australia as case studies. The fourth chapter, *Research Approach*, outlines and justifies the research approach and data collection methods that were applied. Case study data are assembled by firstly building a strong foundation of secondary data drawn from predominantly public sources and then supplementing this with data drawn from interviews with key stakeholders. The fifth chapter, *Analysis*, examines the content of the data collection. The sixth chapter,

Discussion, discusses the significance of the findings and then develops conclusions. The seventh, and final, chapter, *Conclusions*, brings together the thesis' original contribution to knowledge and develops the implications for further research.

Chapter 2: Literature Review

2.1 INTRODUCTION

This thesis attempts to identify an alternate conceptualisation of the relationship between government and private operators to address the failure of some privatisations to meet the evolving requirements of the public with regards to service delivery. It is possible that the conflict between private operators and government, contractual disputation and failure of privatised infrastructure is caused by limitations and assumptions arising from Agency Theory. This chapter interrogates the literature to understand the limitations of Agency Theory and explores the capacity of Stewardship Theory to offer a conceptualisation of the principal-agent relationship which addresses the limitations of Agency Theory and achieves stewardship.

As the prominent failures of privatised services have occurred in those services shared across communities the scope of this research has been narrowed to focus on critical *networked infrastructures* such as transport, telecommunications, energy, water and streets (Graham & Marvin, 2001). Within that grouping the ‘privatised infrastructures’ considered encompass both those owned and operated by private companies and those owned by government but operated by private companies. ‘Private companies’ are limited to only for-profit companies.

This chapter explores the literature regarding privatisation, the stewardship of public values, Agency Theory and Stewardship Theory and has recourse to the broader body of literature to supplement areas where Agency and Stewardship theories may be underdeveloped. Firstly, the literature in respect of the stewardship demands upon government in the context of privatisation reforms is explored, having particular regard to the concept of stewardship and the stewardship of public values. Secondly, the key elements of Agency Theory are examined and the limitations inherent in that theory are highlighted and Stewardship Theory and its capacity to address the limitations of Agency Theory are then explored.

2.2 STEWARDSHIP DEMANDS ON GOVERNMENT

Although the public has largely accepted the decision of governments to privatise most critical infrastructures the public has not surrendered the expectation that the “...ultimate responsibility for providing high-quality essential services will always remain with government” (Funnell et al., 2009, p. 10). This section firstly examines the literature as to the intent behind current privatisation, focusing in on the public expectations as to stewardship of infrastructure. Secondly, the range of meanings of stewardship is explored and a definition of contemporary stewardship is developed. Thirdly, the suitability of public values to express stewardship expectations by the public and as a measure of stewardship is explored.

2.2.1 Privatisation

Privatisation of public sector activities gained momentum in Australia, the United Kingdom and northern Europe (Funnell et al., 2009) in the 1980s and 1990s. By the late 1990s proceeds of privatisation in Australia had amounted to AUD\$61b reflecting that for the years 1990 to 1997 Australia was second only to the United Kingdom in the value of privatisations (Funnell et al., 2009, p. 9). Privatisation had been seen by governments as a strategy to access private capital funding and advance the ‘user pays’ principle and other aspects of the NPM ‘Three Es’ — efficiency, effectiveness and economy (Pollitt & Bouckaert, 2004) — all whilst seeking to pass off commercial, economic and political risks to the private sector.

For some privatisations the commercial risks (e.g. delivering on time and within budget) have been well managed but political and governance risks appear to have increased (Hodge & Greve, 2007). As to political risk, Deakin and Walsh (1996) found that in Britain in the 1980s and early 1990s politicians had been drawn back into the debate making it difficult for politicians to escape being called to account for the performance of services. More recently Pollitt and Bouckaert (2004) analysed the waves of reform which swept through public sectors in the preceding 20 years. Pollitt and Bouckaert (2004) and concluded that any suggestion that NPM initiatives (including privatisation) can radically depoliticise public administration is contrary to evidence from many countries that the public often sees the political authority as responsible.

The proposition that even when privatisation meets initial economic objectives political risks emerge at a later time is demonstrated by the individual examples cited earlier in the Introduction to this thesis. The Melbourne metropolitan rail system brought prolonged criticism upon the Victorian Government with the first private operator failing to run scheduled services (PPPs: plans, PR, procrastination. *The Age*, 2009, January 15, p. 10), and the replacement operator being paid \$180m more than the previous operator only to run trains more behind timetable than its predecessor (Lucas 2010, May 5). Embarrassingly for government, in March 2012 the operator increased the timetable journey times to reflect actual journey times (Carey 2012a, March 7) and in May 2012 still only ran 90.7% of trains on schedule (Carey 2012b, June 8).

Again, in a second example, the privatised non-metropolitan intrastate rail network, the government received severe criticism. Due to the ineffective maintenance obligations in the lease there was minimal maintenance of freight lines. This impacted badly on the movement of grain to port and it was not possible to run fast-rail passenger trains at the intended speed resulting in significant and continual criticism of the government. More criticism ensued when it was alleged that the fast-rail project had cost \$750m compared to initial estimates of \$80m and that there had been only a 3.5 minute improvement in the 62 minute journey between Geelong and Melbourne (Gray, 2004). The privatisation continued to plague the government when in June 2009 the Auditor-General found that the full cost of the 2007 buy-back was likely to be \$214m, notwithstanding the government in 2007 announcing the price to be \$138m (VAGO, 2009).

Similar political risk materialised for the New South Wales Government when the private operator of the Port Macquarie Base Hospital found the hospital to be more expensive to operate than anticipated; service levels declined and the local community vigorously called on the government to restore services. In 2005 the government was forced to resume the responsibility for the operation of the hospital (Funnell et al., 2009).

These three examples offer strong corroboration of Funnell et al.'s (2009, p.10) conclusion that for many services the transfer of operational and financial risk to the private sector is not possible. This unequivocal conclusion by Funnell et al., (2009), and the findings of Deakin and Walsh (1996) and Pollitt and Bouckaert (2004) that

despite privatisation the public holds the political authority accountable, would appear to outweigh the case study research of Hodge and Greve (2007) where they concluded that for some privatisations the commercial risks have been well managed but that political and governance risks appear to have increased (Hodge & Greve, 2007). Clearly the corollary to the observation by Hodge and Greve (2007) is that there are privatisations where none of the types of risk have been well managed. The absolute perspective taken by Funnell et al., (2009) suggests an underlying premise that political, operational and financial risk cannot be separated, and that if political risk eventually emerges then the commercial successes of the privatisation are ignored and the privatisation is deemed a failure in terms of stewardship of the infrastructure. Alternatively the cautionary approach of Deakin and Walsh (1996) and Pollitt and Bouckaert (2004) with their implied indication that there are privatisations which have not offended public values and have not precipitated politicians being called to account suggests that there must be arrangements for privatised infrastructures which satisfy public values.

This evidence of political risk materialising when the public perceives that their values are not met establishes the role of public values as an expression of the expectations of the public. The expectation of the public as to stewardship is explored, and the usefulness of public values as a measure of those stewardship expectations are considered in the following sub-section.

2.2.2 Stewardship expectations

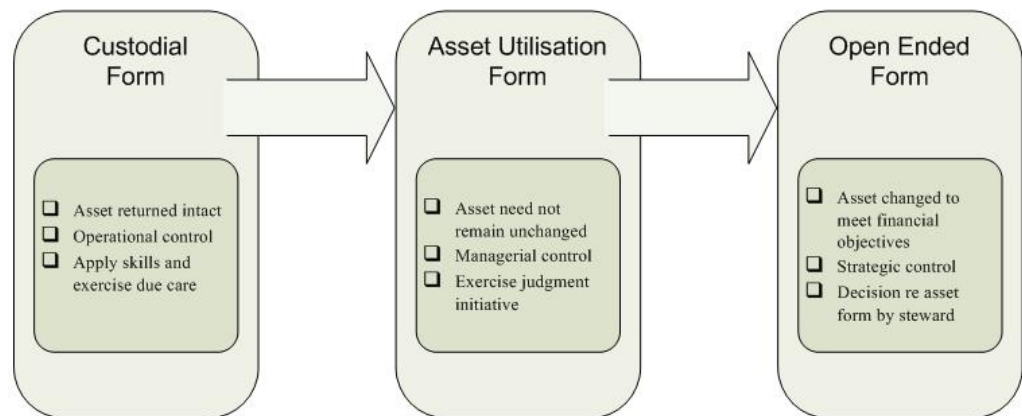
Stewardship in the context of infrastructure a particular infrastructure can be simply described as operated to the appropriate standard and continually being maintained to meet evolving community needs.

Expectations as to the stewardship of each individual infrastructure can be quite specific and the next sub-section of this chapter builds an argument that satisfaction of public values such as affordability and quality of services can serve as measures of the achievement of stewardship. The concept of stewardship of critical infrastructures is explored by first considering the range of conceptualisations of stewardship and then a modern definition of the steward in the context of critical infrastructures is formed.

Stewardship has deep roots in the Christian and Jewish religions wherein a steward cares for an asset on a day-to-day basis, anticipates future trends in all issues impacting the asset, devises grand plans and has an obligation to improve the assets to match anticipated requirements of the asset owner (Saltman & Ferroussier-Davis, 2000). Block (1993) conceptualised the leadership role of all members of an organisation as a stewardship responsibility and willingness to be accountable for the well-being of the larger organisation through service rather than control. Stewardship in the environmental context has progressively developed into a form of governance (Gray & Hatchard, 2007) comprised of all forces driving the environment-related agenda forward, which collectively bear intergenerational responsibility.

Each of these perspectives on stewardship has in common the intertwined themes of obligation, accountability and responsibility to advance the interests of all others in both the short and long terms. These three themes were seen by Birnberg (1980) as the fundamental building blocks when constructing a hierarchy of forms of stewardship which distinguishes between three levels of stewardship according to the level of responsibility of the steward to enhance the asset and discretion of the steward to convert the asset. The distinction between the forms of stewardship developed by Birnberg (1980) is set out in Figure 2.1.

Figure 2.1 Forms of stewardship



Source: Model based on the forms of stewardship identified by Birnberg (1980)

In the traditional custodial form identified by Birnberg (1980) the responsibility of the steward is to take care of the item and return it to the owner intact. For example, a private contractor doing no more than maintaining a water storage dam and its equipment at the standard when the contract commenced. The asset utilisation form sets the responsibility of the steward in terms of objectives and targets, which in the water storage example might be improved performance as to water quality, environmental impact and volume of water delivered. This asset utilisation form allows the steward more autonomy and commensurate judgement than does the custodial form. In this model there is no intent by the owner that the asset remains unchanged over time. The steward may be authorised to sell certain assets for other assets if that will enhance the probability of meeting the owner's charge. Thus the steward with the asset utilisation charge has the responsibility to contribute both initiative and insight whilst achieving the goals and targets set by the owner. In the open ended form the asset owner allows the steward extensive, open ended autonomy in meeting objectives which are most often set as monetary targets allowing for the assets to be converted to any other form. An example is modern investment corporations where shareholders require executives (as stewards) to generate a specified level of profit and accept the conversion of assets e.g. selling traded equities to purchase commercial property.

There is no example of this open ended form of stewardship in the critical infrastructures context, as the core infrastructure must always remain in the form required by the community. Even those infrastructures that have been divested to the private sector (fully privatised) such as the water services in England were regulated to ensure that when water infrastructure is sold between private parties it remains as a water service for the public (Rees, 1998). At the other end of Birnberg's (1980) continuum the custodial form may largely align well with public expectations with respect to critical infrastructure. Yet as most critical infrastructures are natural monopolies situated in a community; the public requires continually improving performance against criteria of accessibility, affordability, reliability and environmental quality (de Bruijn & Dicke, 2006; De Bruijn, Dicke & Steenhuisen, 2008; Van Gestel, Koppenjan, Schrijver, Van de Ven & Veeneman, 2007; Van Gestel, Koppenjan, Schrijver, Van de Ven & Veeneman, 2008). It is this

aspirational, future-oriented expectation upon the steward which is described best by the asset utilisation (Birnberg, 1980) conceptualisation of stewardship. Thus it would seem that to best describe the stewardship of critical infrastructures it is necessary to draw on aspects of both the custodial and asset utilisation forms of stewardship.

To focus this research and provide a conceptualisation of the behaviour of the steward it is proposed to knit these perspectives together to create the following definition of the steward:

Steward: A steward is an agent, contractor or employee who has been engaged on the basis of having the requisite knowledge and skills and who exercises initiative and judgement to actively act in the interests of the principal.

Testing this definition in the context of critical infrastructures, the steward would be acting in the interests of the principal (the government entity) which is a surrogate for the service users, largely the public. The steward organisation would be applying its knowledge, skills and judgement to meet the expectations of the public. The stewardship expectations of the public are expressed in terms of the pertinent public values. In order to bring precision to the term ‘stewardship expectations’ the concept of public values is explored for its utility as a measure of those stewardship expectations.

2.2.3 Public values

Public values such as affordability and environmental quality provide a terminology that is suitable to describe the steward’s responsibility for critical infrastructures. This thesis proposes that public values will have two roles: one role as the driving force behind the public having expectations of the government in respect of critical infrastructures and the other to measure whether stewardship has been achieved. This sub-section firstly considers the various levels of public values, progressively drilling down to those attached to critical infrastructures. Secondly, public values as an expression of stewardship expectations and a measure of the achievement of stewardship are explored.

At the highest level, public values are universal values such as democracy, efficiency and sustainability (Van Gestel et al., 2007). These values provide a

normative consensus about the rights of citizens, their obligations to society and one another, and the principles on which governments and policies should be based (Bozeman, 2009). Drilling into the part of society characterised by its ‘publicness’ (both state and market sectors) Jorgensen and Bozeman (2002) identify values which guide individuals, organisations and policies, for example integrity, honesty, probity and transparency. Drilling further into that public arena de Bruijn and Dicke (2006), de Bruijn et al., (2008), Van Gestel et al., (2007) and Van Gestel et al., (2008) identified substantive public values specific to networked infrastructures such as quality of services and accessibility.

Van Gestel et al., (2008) drew on the burgeoning literature as to the public values connected to utilities to develop a framework of levels of public values at play. The framework was then applied to six completed networked infrastructure projects. Van Gestel et al., (2008) identified which values were important (or in tension with other values) at the four stages (preparation, design, realisation and execution) of the projects. The public values which were confirmed as being at play during the various stages of the projects are listed in Table 2.1 below.

Table 2.1 Public Values — Netherlands’ public infrastructure projects

Public values with respect to:	Examples
<i>Government</i> — society in general	Democracy, legitimacy Reliability Efficient use of public resources
<i>Employers</i> — employees/customers	Quality of services Safety of employees, customers Reliability of employers
<i>Infrastructure</i> — target groups	Universal access Low prices Specific tools for people with a disability
<i>Infrastructure</i> — regional economy	Economic development Mobility Environmental quality
<i>Infrastructure</i> — general social effects	Safety Health Sustainability

Source: Van Gestel et al., (2008, p.141)

The findings of Van Gestel et al., (2008) are highly important as they offer a clear insight as to why there is significant political risk attached to critical infrastructures and why public values describe the public's expectations as to the performance of critical infrastructures. Van Gestel et al., (2008) found that the public values considered most important at the start of all six projects (i.e. economic development and environmental quality) were not the values that received the most attention in the later stages of those same projects (i.e. efficiency, transparency and democracy). Van Gestel et al., (2008) also found that public values were subject to tensions and conflicts between values (e.g. efficiency versus accessibility). Thus the importance of the particular public value was not held constant over time by the community, but rather the importance of the public values changed over time (Van Gestel et al., 2008). These findings by Van Gestel et al., (2008) confirmed the contentions of de Bruijn and Dicke (2006) that public values such as efficiency, affordability and safety all co-exist, competing and conflicting, with the public continually adjusting its choice between values.

The satisfaction of these conflicting and changing public values requires a trade-off through judgement which often tends to be subjective (de Bruijn & Dicke, 2006; Van Gestel et al., 2008), presenting as a heightened political risk for governments as the application of privatisation to critical infrastructures intensifies. An example from the research of Van Gestel et al., (2008, p. 143) was the initial focus on innovation resulting in issues relating to maintenance and systems operation being neglected and the government and taxpayer ultimately suffering high maintenance costs, less social safety and operational failures. Privatisation, and often merely the proposal to privatise, has led to intense debate which has been conducted in the language of public values. Privatisation, liberalisation and contracting out have put public values "under stress" (Veeneman, Dicke & de Bruijne, 2009, p. 415) and often have the effect of eroding public values through the accumulation of market values substituted for public values (Jorgensen & Bozeman, 2002, p. 65). This concern has resulted in a significant body of literature which focuses upon the ways in which public values pertaining to infrastructure are safeguarded (Koppenjan, Charles & Ryan, 2008, pp. 131-134). As observed by Veeneman et al., (2009), "Public values are the reason why many infrastructures exist today: ... Without them, modern societies crumble" (p. 415). In that way it is

public values which drive the public's expectation as to the performance of the infrastructure, and are the essence of the stewardship the public expects from governments and private participants.

The next issue then is whether public values will provide a suitable measure of the achievement of stewardship. For a measure to be considered suitable the measure must be demonstrably the outcome of actions of the agent/steward and must be identifiable through robust research methods. The performance of the agent or steward in respect of values such as reliability, efficiency, and access, environmental, economic and social sustainability can readily be assessed from secondary data, interviews or a questionnaire, as can the link between the actions of the agent or steward and the satisfaction of public values. The necessary data can be obtained and analysed using proven, robust methods suggesting that public values will provide a suitable and practical measure of the achievement of stewardship.

Public values determine the public's expectations as to the performance of critical infrastructures, and satisfaction of public values attaching to a specific infrastructure is for that reason an appropriate measure of the achievement of stewardship of that infrastructure.

2.3 AGENCY THEORY AND STEWARDSHIP THEORY

The clearly different goals of the government and the private companies evidenced in the failed privatisations and the disputation and tensions described in Chapter 1 bring attention to the issue of whether the configuration of the contractual relationships for infrastructures contributes to the unsatisfactory outcomes. Privatisation as a key element of the NPM reforms adopted the models of contractual relationships which had proven successful in the private sector across a range of industries and the vast majority of these have been configured in accordance with the tenets and assumptions of Agency Theory. There is a possibility that these Agency Theory prescriptions are not suitable for the contractual relationships applying to the operations and maintenance (O&M) of privatised critical infrastructures. An example is long-term, traditional contracts such as those required for the O&M of infrastructure that have been based on Agency Theory. These have been shown to be less suitable for achieving the principal's objectives because of the incompleteness of the contract which results from the difficulty of adequately specifying the outcomes

required in distant years (Keast, Waterhouse, Brown, & Mandell, 2005, Walker & Hampson, 2003). In providing an alternate conceptualisation of contractual relationships, Stewardship theorists have identified significant limitations in the Agency Theory assumptions about the behaviour of the agent.

2.3.1 Agency Theory

Agency Theory conceptualises all relationships as contracts. Perrow (1986) explained this foundation of Agency Theory, saying:

In its simplest form, agency theory assumes that social life is a series of contracts. Conventionally, one member, the 'buyer' of goods or services is designated the 'principal', and the other, who provides the goods or service is the 'agent' — hence the term 'agency theory'. The principal-agent relationship is governed by a contract specifying what the agent should do and what the principal must do in return. (Perrow, 1986, p. 224)

Agency Theory has focused on contractual relationships between buyers and sellers (Waterman & Meier, 1998, p. 174) in commercial relationships which developed after World War II to address the problem of parties in the agency relationship having conflicting goals and differing attitudes to risk (Jensen & Meckling, 1976). Agency Theory was able to meet the need for a theory which might better explain the behaviour of owners and managers (Jensen & Meckling, 1976), board chairs and chief executives (Donaldson & Davis, 1991), principals and managers (Davis, Schoorman & Donaldson, 1997), and boards of directors (Muth & Donaldson, 1998) in the large corporations which burgeoned in the 20th century. Individuals had sold off their ownership, dispersing the shareholdings whilst the organisations also grew in size and complexity. Professional managers became the only parties with the specialised knowledge necessary to operate the company and were free to maximise their own self-interest at the expense of the shareholders (owners).

Agency Theory took the perspective that those managers cannot be trusted and prescribed that they be controlled by a board (Muth & Donaldson, 1998). Agency Theory was progressively applied to a range of situations outside the for-profit corporations. Waterman and Meier (1998, pp. 194-199) challenged the basic assumptions of the principal-agent model in the context of politician/bureaucrat relationships and found that the model was not generalisable, was simplistic, failing

to recognise a range of conceptualisations of the relationship, in particular that where goal conflict does not exist and the principal possesses the information necessary to exercise control. Caers et al. (2006) demonstrated that the not-for-profit sector is not quarantined from the configuration of relationships according to Agency Theory principles. Dicke and Ott (2002) examined the utility of human services accountability methods which were grounded in Agency Theory and explored the capacity of Stewardship Theory to assist in the development of the accountability methods internal to the individual employee.

Both Agency Theory and Stewardship Theory were applied to human services by Van Slyke (2007) to explore how government contract managers manage the contractual relationships with not-for-profit organisations. Van Slyke (2007, p. 182) found that the initial disposition of public managers was consistent with Agency Theory and the initial disposition of not-for-profit executives was consistent with Stewardship Theory. Agency Theory has been found to be highly useful in understanding the behaviour of principals and agents in contractual relationships. As observed by Jensen and Meckling (1976), “The problem of inducing an ‘agent’ to behave as if he were maximizing the ‘principal’s’ welfare is quite general. It exists in all organizations and in all co-operative efforts...” (p. 309). However not all parties to contractual relationships behave in the manner conceptualised in Agency Theory. Yet Agency Theory prescriptions are applied broadly — possibly indiscriminately — perpetuating assumptions as to behaviour that may impact adversely on the stewardship outcome.

In this sub-section the key assumptions of Agency Theory viz. conflicting goals, information asymmetry favouring the agent, agents being risk-averse, and agency loss are first considered. The limitations that are created by those assumptions and which may affect the capacity of the agent to act as steward are then discussed to identify the direction this thesis must take.

2.3.1.1 *Goal conflict*

Goal conflict is conceptualised as the conflict or divergence between the goals of the principal and the goals of the agent (Eisenhardt, 1989). Agency Theory with its basis in economics characterises both parties to the agency relationship as self-interested, utility maximisers (Davis et al., 1997; Jensen & Meckling, 1976). This self-interest has been portrayed as goal conflict or goal divergence with the

early, normative conceptualisation being that of outright opposing goals. Such a simplistic model has been progressively relaxed with Eisenhardt (1989) having regard to a range of empirical data and asserting that, amongst other things, if goal conflict decreases the agent will behave as the principal would like irrespective of whether the behaviour is monitored. The rigid view of goal conflict was subsequently reconceptualised as a variable operating on a continuum ranging from conflict to consensus (Waterman & Meier, 1998, p. 185) and then as an axis ascending from “zero (consensus)” to “agency conflicts” (Caers et al., 2006, p. 29). In that way the Agency Theory model was expanded to align with a much greater proportion of the relationships examined in empirical studies.

2.3.1.2 *Information asymmetry*

The principal not having sufficient information to verify that the agent is behaving appropriately is held by Agency Theory to exacerbate goal conflict (Eisenhardt, 1989). Typically the principal does not have the specialist technical expertise of the agent (Waterman & Meier, 1998, p. 184) or does not have access to the information held by the agent. This ‘information asymmetry’ (typically assumed to advantage the agent) is not itself the problem, rather the problem is the possibility of opportunism on the part of the information holder (Van Slyke, 2007). Opportunism commonly occurs when either party uses information and expertise and acts in its own self-interest, contrary to the contractual terms (Van Slyke, 2007) and disadvantages the other party. Agency theorists conceptualise opportunism as extending beyond immediate, expedient decisions to include long-term, systemic decisions. The very possibility of opportunism causes the principal to incur an agency cost by way of increased controls. The concept of agency cost and its limitations in the modern context are discussed in *Section 2.3.1.4 Agency cost*.

Information asymmetry, the assumption where the agent possesses more information than the principal, originates in Agency Theory research into the behaviour of owners, board chairs, directors, chief executives and managers. However, the generalisability of this assumption has been challenged by research into both the market and bureaucratic sectors. Waterman and Meier (1998) concluded that in the public sector setting, which is characterised by multiple ‘principals’ in the form of regulators, oversight agencies and interest groups who require and publish widely information as to the performance of the agent,

information asymmetry may not be as common as in the market place (pp. 180-183). Eisenhardt (1989, pp. 65-70) examined the findings from 12 Agency Theory market sector empirical studies and found that there was support for the proposition that in the market sector the information provided by boards and efficient markets addresses and mitigates opportunism resulting in the agent acting in the interests of the principal. Eisenhardt (1989, pp. 60-61) accordingly debunked the simplistic model of the principal-agent literature, observing that there are cases of 'complete information', ones where the principal knows what the agent has done, and went on to note that for those cases a contract based on the agent's behaviour is most efficient.

Waterman and Meier (1998, p. 184) in the context of the state sector observed that the expertise of a party in a particular type of information, for example process (technical), policy and political expertise, results in information asymmetry favouring that party. The subsequent Agency Theory literature has not further explored the issue of information asymmetry, yet specialisation has increased exponentially to the extent of some organisations being described as 'virtual' organisations, having much of their productive capacity provided by contractors. Accordingly the Agency Theory conceptualisation of information asymmetry may be out-dated and leading to assumptions which diminish the stewardship outcome.

In the late 20th and 21st centuries there has been a simultaneous rise in the availability of information. Extensive regulatory regimes, widespread use of information technology, smart ways of providing measurement and unforgiving community expectations have resulted in many industries and organisations being information rich. Certain modern commercial contracts specify the responsibility of the party to provide other parties with particular data immediately. Organisations which are subject to relevant corporations law must meet comprehensive regulatory and reporting requirements, and are scrutinised by the media, share markets, investors and competitors. Government agencies (increasingly including the commercial entities) are the subject of extensive reporting requirements and their partners in the agency relationship have access to additional regulators, appeal tribunals and the courts.

It may be the case that modern contractual relationships do not suffer significant information asymmetry. This conceptualisation would alert the contract

parties to the possibility of information asymmetry and allow them to configure relationships to avoid the higher costs of increased controls. Critical infrastructures could then be governed by contractual relationships which achieve reduced costs of control and which replace control with other behaviours which promote the stewardship of the infrastructure.

2.3.1.3 Risk appetite

Agency Theory also assumes that the principal and agent have different appetites for risk and in the circumstances where the risk experienced is more than the party's appetite the principal or agent acts opportunistically (Jensen & Meckling, 1976) to mitigate the risk (Eisenhardt, 1989). The principal apprehends or experiences the action by the agent which is averse to the interests of the principal and institutes more monitoring and control, increasing agency cost. As the amount of agency cost the principal can bear is finite, the allocation of risk between principal and agent becomes important for the principal. Formalising this trade-off between risk and agency costs in efficient contractual terms is a key feature of Agency Theory (Eisenhardt, 1989).

Market sector principals are conceptualised as risk-neutral because they can diversify their investments by owning shares in multiple companies and agents are conceptualised as more risk-averse because as employees they are unable to diversify their employment (Eisenhardt, 1989, pp. 60-61). There has been some movement to reconceptualise the risk appetite of principals and agents in more relaxed forms. Eisenhardt (1989) validated one proposition where the agent was less risk-averse because the individual was wealthy and validated a second proposition where the principal was not risk-neutral but was risk-averse because of the behaviour-based nature of the contract. A modern example is the agent being a global organisation with substantial capacity and capability to manage risk, resulting in a positive appetite for risk.

In respect of the operation of risk preferences of principals and agents in the state sector Agency Theory literature is limited — particularly so in respect of government as principal and the agent a private company. Yet the public has set expectations which have beaten the appetite for risk of government down to a level much lower than that of the principal in the market sector. Funnell et al., (2009) describe the public values in operation:

There is far less tolerance for government failure than tolerance for market failure...In the market place it generally matters little if business gets things wrong 10 per cent of the time. What is important are the final results, the overall outcome, the other 90 per cent. In stark contrast, in government it is the 10 per cent of the time when things go wrong which might matter most, not the 90 per cent of things that are done right. (Funnell et al., 2009, p. 14)

Van Slyke (2007) found that state, county and urban public administrators managing contractual relationships with not-for-profits were risk-averse because of a lack of replacement providers and their skills to manage contracts not being adequate. In these same contractual relationships the agents (the not-for-profits) in suburban counties were found to be risk-averse because of the competition and legitimate risk of contract termination (Van Slyke, 2007, pp. 176-182). This experience resonates with the findings of McGregor Lowndes (2008) who found that governments in Australia have shifted risk to not-for-profit organisations "...irrespective of whether those organisations are in the best position to manage such risks." (p. 51).

The issue then is that there is a strong possibility that the Agency Theory conceptualisation of the risk appetite of the principal and agent is no longer current, particularly for privatised infrastructures which are characterised by the mixing of sectors by way of a government principal and a private company. The assumptions as to risk appetite are based on empirical research as to the behaviour of agents who are individuals such as owners and managers (Jensen & Meckling, 1976), board chairs and chief executives (Donaldson & Davis, 1991), principals and managers (Davis et al., 1997), and boards of directors (Muth & Donaldson, 1998). The exception is the work of Van Slyke (2007) where individual not-for-profit executives were interviewed as proxies for their organisations and public managers as proxies for their public agencies. If similar research at the inter-organisational level between government and the private sector were carried out it may be possible to identify circumstances where private companies as agents have an appetite for risk that is not being accessed. This may be found to be due to the continued adoption by government of a simplistic market sector principal-agent model regarding risk appetite which has no legitimate application to the state sector or its agents.

If contractual arrangements that allocate risk to the full extent that the private organisation can bear are adopted then it is highly possible that government can harness the complete private sector capabilities and efficiencies and achieve better stewardship of the infrastructure. For the private company agent the acceptance of greater risk and increased contribution of its technology and capability would be compensated by increased reward — such an increase in reward being funded by the efficiencies achieved by the reapportionment of risk. Innovative contractual relationships which minimise the self-interest of parties and which emphasise collaboration and the pursuit of the interests of other stakeholders have emerged in recent years. Relational contracts (Grimshaw, Vincent & Willmott, 2002; Rahman & Kumaraswamy, 2004; Walker & Hampson, 2003; Waterhouse, Brown & Flynn, 2001), PPP's (Hodge, 2002; Hodge. & Greve, 2007) and hybrid mixes of organisations from the state, market and network modes (Keast et al., 2006) which have departed from the traditional concepts of risk apportionment have emerged. Relational contracts share the risk and typically provide for the sharing of reward, resulting in the poor performance of one party translating into actual losses for all parties (Keast et al., 2005, p.4). The construction industry has been at the forefront of adopting relational contracts, applying them to design and construction, including that of critical infrastructures (Walker & Hampson, 2003). However the majority of privatisations of critical infrastructures have been for the O&M of existing infrastructures with an increasing number of the private participants in those privatisations being drawn from the construction industry. It follows then that innovative forms of contractual relationships such as relational contracting may translate successfully to the O&M of critical infrastructures.

Empirical research into forms of contractual relationships which address the assumptions of Agency Theory as to the risk appetite of agents will assist in identifying those forms which achieve stewardship of critical infrastructures.

2.3.1.4 Agency cost

Agency Theory has been shown to focus on the resolution of the agency problem by providing a framework to assist the principal to determine the most efficient trade-off between goal conflict, risk and control/monitoring costs. The net cost of the trade-off has been conceptualised as the “agency cost” (Jensen & Meckling, 1976, p.308) and is a concept similar to transaction costs, which in the

economic literature are described as “...the sum of the costs associated with engaging in exchange and contracting activities, which are distinct from the costs of production” (Polski, 2000, p.11). Jensen and Meckling (1976, p.308) defined agency cost as being comprised of the following costs:

- the monitoring expenditures by the principal;
- the bonding expenditures by the agent; and
- the residual loss (agency loss).

Monitoring expenditures includes budgets, operating rules, specified reporting requirements, financial incentives, audits, third party assessments and performance evaluations (Davis et al., 1997, p.22; Jensen & Meckling, 1976 p. 308-309), and governance mechanisms such as company structures (and their boards of directors) (Davis et al., 1997, pp.22-23; Donaldson & Davis, 1991). Agency costs arise in any situation involving cooperative effort by two or more people (Jensen & Meckling, 1976, p. 309) and no theory argues that the principal does not need to incur some cost of controls, incentives etc., whilst Stewardship theorists (Davis et al., 1997; Tosi et al., 2003) argue that Agency Theory controls can be counterproductive in that they inhibit the motivation of the agent. The overall position of Stewardship Theory is that costs associated with accountability can be reduced (Van Slyke, 2007), as distinct from being avoided. As the Agency Theory concept of monitoring costs is not shown by the literature to have a possible causal link to the agent not acting in the interests of the principal it is proposed to not consider the monitoring expenditures component of agency cost further in this thesis.

Bonding expenses are the expenses incurred by the agent when required contractually by the principal to guarantee performance. Whilst required by the principal as a device to control the performance of the agent, the possibility of the bonding expense to the agent increases the risk to the agent which leads to the agent seeking a greater reward. The use of this control device is not widespread and has received limited attention (Jensen & Meckling, 1976; Van Slyke, 2007) in the literature. Whilst separated out as “the bonding expenditures by the agent” in the definition formed by Jensen and Meckling (1976) there is no material difference between bonding expenses and the monitoring expenditures discussed earlier and will similarly not be considered further in this thesis.

In contrast, agency loss provides a valuable insight into the perspective taken by Agency theorists as to the extent of the capability of any agent. As well as characterising agents as being opportunistic and requiring close control, Agency theorists hold that in most agency relationships the agent will not be able to carry out the task as well as the principal could if the principal itself had done the task (Jensen & Meckling, 1976). The assumption that agency loss is inevitable has its origin in the early role of Agency Theory in explaining the behaviour of executives and managers when individual owners of corporations sold off their shareholding publicly and reduced their personal involvement in the management of the corporation. Agency Theory assumed that the returns to the owners (the principal) would fall below what they would be if the owners themselves continued to directly manage the corporation rather than contract with executives/managers (agents). The perspective of Agency theorists on agency loss is described by Donaldson (1990) as "...a degree of under-fulfilment of the wishes of the principal by the agent" (p. 369). This conceptualisation of the principal as being fully competent for any role and of the agent needing control, behaving opportunistically and inevitably under-fulfilling the role conceived by the principal ignores the actual capability of the agent and risks the creation of a self-fulfilling prophecy of the agent not performing to a high level.

The agency loss assumption would appear to be flawed or, at the least, outdated. As Vandaele, Rangarajan, Gemmel and Lievens (2007, p. 237) observed "In today's turbulent marketplace, firms are increasingly concentrating on their core competencies to remain competitive. Consequently, these firms resort to outsourcing those activities that fall outside their own domain of expertise." Similarly, the state and not-for-profit sectors are now comprised of highly specialised service providers to whom the principal willingly contracts if (and only if) the agent can carry out the task better than the principal itself could. Muth and Donaldson (1998, p. 5) observed that the professional managers (agents) appointed by owners were progressively becoming the only parties with the specialised knowledge necessary to operate the corporations, subtly making the point that the principal does not have that knowledge and would not be capable of performing to even the level of the agent.

If the assumption of agency loss continues to operate, in concert with the other Agency Theory assumptions that agents seek to pursue their own goals, act opportunistically and require control (Davis et al., 1997, pp.22-24), then there is

every likelihood that contractual arrangements will deliver less favourable outcomes than would be possible if the assumptions were not in play. Accordingly, of the three elements of Agency Theory agency cost (monitoring expenditures, bonding costs and agency loss), agency loss offers the possibility of being an assumption which limits the outcome of the contractual relationship.

2.3.1.5 Discussion

This examination of key assumptions underpinning Agency Theory has identified that the assumption of goal conflict or divergence, the paradigm of information asymmetry favouring the agent, the assumption that the agent is risk-averse and the assumption of agency loss may each be incorrect in the modern context of the agent being a specialist or large organisation. As the complexity of service delivery requirements increase the role of agent can only be assumed by an organisation. As those agent organisations are contracted by the principal only if the agent has a level of specialist skills higher than that assumed by Agency Theory, the possibility of inappropriate Agency Theory assumptions being in operation is substantial and demands that this research explore those assumptions further. This sub-section discusses the limitations that these possibly out-dated assumptions may be imposing upon the outcomes of contractual relationships and sets the direction the research must take to identify alternate conceptualisations of the relationship which achieve better stewardship.

Goal conflict (or indeed goal divergence) as an assumption within Agency Theory has progressed to a conceptualisation as a continuum ranging from conflict to consensus (Caers et al., 2003, Waterman & Meier, 1998). Yet discussion of agency relationships continues to often be simplistic, remaining at the normative level with the emphasis being upon conflict or goal divergence. Information asymmetry as asserted by Agency Theory to engender opportunism on the part of the agent and in turn goal conflict and increased controls may not be the case in the modern context. The capability for the principal and agent to share quite detailed ‘real-time’ information is available and affordable to governments and private companies of the size which operate critical infrastructures. For that reason it is timely to challenge the Agency Theory paradigm of relationships being ripe with opportunism caused by information asymmetry. If there was symmetry of information within a contractual relationship then costs of controls and monitoring would be reduced and a closer

convergence of goals achieved. If research were conducted to pursue the possibility of information symmetry then Agency Theory could be developed and contractual relationships configured to reduce agency costs and achieve better stewardship of infrastructures.

The assumption that agents are risk-averse may not be pertinent to the modern context of highly specialised service providers and large companies as agents. If specialised service providers were shown to have an appetite for risk because of their superior knowledge and capabilities in the specialist area then the principal could obtain a better outcome from a contract which is configured to apportion to the agent the complete risk that the agent can best accept. Similarly, the large international private companies which characterise the infrastructure construction and/or operation sectors have particular strengths as to technical, managerial and financial risk and a contract configured to apportion risks in those areas to the companies as agents would benefit the principal. If the Agency Theory assumption that agents are risk-averse is found to be incorrect in the context of organisations contracted by government to operate privatised critical infrastructure then it is highly probable that the use of contractual arrangements that allocate greater risk to the private organisation can be adopted and a better outcome achieved by the principal (the government entity).

Agency loss has presented as an assumption which conceptualises the typical agent as being of a lesser capability than the principal. The re-conceptualisation of this aspect of Agency Theory to one where the agent exceeds the capability of the principal may well accord with the reality of modern specialists. Alternatively there may be another theory which offers a conceptualisation of the agent that sets no limitations upon the capability of the agent.

In summary, Agency Theory presents distinct assumptions as to the characteristics of the agent. Goal conflict, information asymmetry favouring the agent and opportunism, the agent being risk-averse and agency loss by way of the capability of the agent being less than that of the principal were each found to present as limitations to the conceptualisation of the agent. This limited conceptualisation of what the agent can achieve has a high probability of translating into the principal not accessing the full capability of the agent to achieve stewardship. This research seeks an alternate conceptualisation of the agent — one where the agent acts in the

interests of the principal and pursues the goals of the principal. There is a possibility that such alternate conceptualisation is offered by Stewardship Theory. The key tenets of Stewardship Theory and how Stewardship Theory differs from Agency Theory are explored in the following section.

2.3.2 Stewardship Theory

Stewardship Theory emerged in the 1990s as scholars (Davis et al., 1997; Donaldson, 1990) sought to understand the pro-organisational behaviours of employees, managers and chief executive officers (CEOs), and for which Agency Theory could not provide a satisfactory explanation. Empirical studies have applied Stewardship Theory to: CEO membership of boards (Donaldson & Davis, 1991), board structure (Muth & Donaldson, 1998), human services (Dicke, 2002; Ott & Dicke, 2000; Van Slyke, 2007), not-for-profit board–manager and manager–employee relationships (Caers et al., 2006), not-for-profit organisation and stakeholder relationships (Van Puyvelde, et al., 2012) and private company executive compensation (Wasserman, 2006). Stewardship Theory provided a counterpoint to Agency Theory which had been recognised as one-sided “...because it negatively characterises an individual agent’s moral and collective behaviour as self-seeking and obtaining power and wealth; ignores worker loyalty, pride and identification with the organisation’s mission and goals; and omits opportunistic behaviour by principals” (Van Slyke, 2007, p.163). Van Puyvelde, e. al., (2012) saw stewardship theory not as a separate theory but one that complements agency theory and encouraged agency theorists to focus on “limit situations” where agents share the same interests as the principal or are motivated to act in the best interest of the principal, in line with the stewardship view of nonprofit organizations.

Stewardship Theory examines relationships and behaviours in an organisational context and emphasises behaviour in which a higher value is placed on goal convergence in contrast to the goal divergence focus of Agency Theory (Van Slyke, 2007, p. 164) and collective behaviour (Davis et al., 1997, pp. 24-25). Employees or managers are held to be stewards in “...that they will act in the interests of owners” (Donaldson, 1990, p. 377). Thus from the Stewardship Theory perspective the agent acts as a steward of the principal’s interests.

Stewardship Theory has two tenets: one the conceptualisation that agents act in the interests of the principal as “good stewards” (Davis et al. 1997, p.24; Donaldson,

1990, p. 377; Van Slyke, 2007, pp. 164-165); and the other, that certain factors cause stewardship behaviour (Van Slyke, 2007, p. 167). This thesis first explores the conceptualisation of a steward acting in the interests of the principal and then draws out any limitations or issues inherent in the current Stewardship Theory literature. Secondly, the proposition that if pro-stewardship factors such as trust and personal power, autonomy, shared culture and norms, and sense of responsibility (Davis et al., 1997; Van Slyke, 2007, p. 167) are emphasised then the agent will act as a steward are examined to understand the contribution of each factor to stewardship.

2.3.2.1 Concept of stewardship behaviour

The seminal Stewardship Theory work is that of Davis et al., (1997). The authors conceptualised stewards as pro-organisational collectivists who realise the trade-off between organisational needs and personal needs by working towards collective goals in the belief that they are meeting personal goals, saying:

Given a choice between self-serving behaviour and pro-organisational behaviour, a steward's behaviour will not depart from the interests of his or her organisation. A steward will not substitute or trade self-serving behaviours for co-operative behaviours. Thus even when the interests of the steward and principal are not aligned, the steward places higher value on co-operation than defection. Because the steward perceives greater utility in co-operative behaviour and behaves accordingly, his or her behaviour can be considered rational. (Davis et al., 1997, p. 24)

Put simply, Stewardship Theory argues that the pro-organisational values of the steward take precedence over personal interests. The steward maximises their utility by acting in the principal's interests even when the goals of steward and principal are not aligned, and the typical behaviour of the steward is co-operation (Davis et al., 1997, pp. 24-25; Tosi Brownlee, Silva & Katz, 2003). This thesis found that Agency Theory characterised the agent as opportunistic and acting against the interests of the principal and did not contemplate the concept of the agent acting in the interests of the principal. Davis et al. (1997, pp.29-30) found that where Stewardship Theory behaviours were in evidence managers defined themselves in terms of their membership of the organisation by accepting the organisation's mission, vision and objectives and by working towards the goals of the organisation.

However Stewardship Theory has not, to date, set or explained the level of performance of the steward. The Stewardship Theory claim is that the outcome for the principal is better than that from a relationship configured according to Agency Theory. But Eisenhardt (1989) argued that the simple Agency Theory model can be extended by relaxing the assumption of goal conflict and that if there is no goal conflict then the agent will behave as the principal requires, complying with the contract. Importantly the claim of Stewardship Theory goes beyond the Agency Theory (Eisenhardt, 1989) claim that the goals of the principal can be achieved by an agent who is complying with the contract. Stewardship Theory promises a better, higher level of performance as the outcome of 'pro-organisational behaviour' in place of self-interest or 'self-serving behaviour' (Davis et al., 1997).

The issue then is the extent or nature of the benefit brought by the Stewardship Theory relationship that makes such relationship better than the contractual compliance which might be achieved by some models of the Agency Theory relationship. Stewardship Theory does not make clear whether there is any limit to the behaviour of a steward. Davis et al., (1997, p.29) conceptualised the steward's actions saying "...[the steward] will not depart from the interests of his or her organisation." Van Slyke (2007, p. 165) asserted that a steward "...makes decisions he/she perceives to be in the best interests of his/her principals." These conceptualisations would seem to be rigid and possibly unrealistic having regard to the requirement of individual agents to meet their personal needs and for organisations which are agents to meet organisational goals and be comprehensively sustainable. In the case of private companies profits must be made. Davis et al. (1997, p. 30) acknowledged that the pro-organisational behaviour of the steward "...does not imply that stewards do not have necessary 'survival' needs." Unfortunately the examples offered by Davis et al., (1997) and Van Slyke (2007) do not set a limit on the extent to which a steward might act in the interests of the principal.

A further dimension of the extent of the steward's behaviour which is unclear emerges when the agent/steward is an organisation. Davis et al., (1997) explained stewardship in the context of the individual as agent/steward, unfolding the Stewardship Theory "model of man" (p.24). Yet the agent/steward in the contractual relationship for privatised critical infrastructures is invariably an organisation: a

private company. The question then is how far the ‘survival’ needs of the organisation as agent/steward are abandoned by the steward and whether survival needs would encompass the profit which is the expected outcome from a commercial relationship such as those established for privatised critical infrastructures. Put in the negative: *Will a for-profit organisation act as a steward or will the agent/steward seek to protect its profit and in doing so act against the interests of the principal?*

Stewardship Theory is incomplete or underdeveloped in two areas. One area is the extent of the behaviour of the agent/steward which characterises stewardship behaviour, specifically the behaviour that is ‘better’ than that achieved by an Agency Theory relationship. The other is that the literature to date explains the behaviour of agents who are individuals rather than agents who are organisations. The exception is Van Slyke (2007) who explored the contract management techniques applied by government managers to not-for-profit contractor organisations, as distinct from for-profit companies such as those which operate and maintain service delivery infrastructures. If the extent of stewardship behaviour that a principal might reasonably expect was known then principals and agents could make an informed choice between Agency and Stewardship Theory conceptualisations of contractual arrangements. That choice would then have a high probability of resulting in a configuration of contractual relationships which result in private companies achieving stewardship of critical infrastructures.

It follows then that this thesis should seek to establish first that there is stewardship, for instance using satisfaction of public values as the measure of stewardship, and then assess the behaviour of the steward against those behaviours conceptualised in Agency Theory and Stewardship Theory.

The stewardship of critical infrastructures would benefit by way of governments which seek to configure contractual relationships having a much clearer understanding of what constitutes a reasonable expectation as to the behaviour of the steward organisation. At the same time Agency Theory would benefit from the explication of the behaviour of agents who have achieved, or are expected to achieve, stewardship of infrastructures. The agent/steward would benefit from the expectation of stewardship being accompanied by the relationship being configured to minimise divergence of goals and control by the principal, and the resultant opportunity for greater intrinsic and extrinsic rewards and incentives.

The behaviour of the steward is argued by Stewardship theorists (Davis et al., 1997) to be promoted by factors which take the focus off structures which monitor and control on to those which facilitate and empower through long-term relations (Davis et al., 1997). Thus these pro-stewardship factors offer the possibility of being a way to reconceptualise and reconfigure the relationship between principal and agent to achieve a stewardship outcome. These factors are examined in the following sub-section.

2.3.2.2 *Pro-stewardship factors*

The assembly of these pro-stewardship factors from the Stewardship Theory literature by Van Slyke (2007) was a milestone in the development of the relatively young Stewardship Theory. The pro-stewardship factors identified by Van Slyke (2007, p. 167) were:

- personal power and trust;
- autonomy;
- shared culture and norms; and
- responsibility.

Van Slyke (2007) then examined the contracting relationships between five human service agencies (principals) and not-for-profit contractors (agents). Van Slyke (2007) hypothesised that certain trust, reputation and monitoring were used by the government principals to manage contractual relationships. Van Slyke (2007) applied a semi-structured interview instrument to 35 public managers and not-for-profit executives and found that contract management concentrated upon extending trust after the relationship evolved and the agent proved that it could be trusted. This conceptualisation of trust is consistent with Agency Theory as the underlying premise is that “...the agent is not to be completely trusted...” (Van Slyke, 2007, p. 171). Public managers were found to support the proposition that trust extended by public managers was the single most important criterion by which providers were managed, with enhancement or threat to the reputation of the providers being used to a lesser extent. Van Slyke (2007, pp. 176-177) concluded that the use of reputation as an incentive is consistent with either Agency or Stewardship theories. Other pro-stewardship factors (i.e. shared culture and norms, autonomy and sense of responsibility) were not contemplated in the hypothesis nor

reported in the findings. The methodology of Van Slyke (2007) appears to have been directed towards scrutiny of monitoring, with no attention given to the counterpart autonomy. In the case of shared culture and norms, Van Slyke (2007) had established a preliminary assumption that in the area of human services it is acknowledged that the contracting parties share goals. Responsibility was not addressed in the hypotheses of Van Slyke (2007) as the research focused on the behaviour of the principal — that is, the practices of public administrators — as distinct from the behaviour of the agent which would include sense of responsibility to the principal.

The approach taken by Van Slyke (2007) to not explore the other two pro-stewardship factors, shared culture and norms and autonomy, pertinent to the behaviour of the principal and his findings as to trust bring into question the relative importance of the four pro-stewardship factors. The high prominence of trust and relatively low significance of reputation and monitoring, which Van Slyke (2007) had hypothesised as being utilised by public managers to manage the contracts indicate the distinct possibility that the factors do not each have the same or equal impact on stewardship. Van Slyke (2007) had established the assumption that there was shared culture and norms by way of shared goals and the focus of his research did not include the senses internal to the steward, for example sense of responsibility. Thus the methodology of Van Slyke (2007) was not constructed to explore all four pro-stewardship factors and, as he was the first stewardship theorist to bring together the literature surrounding these factors, it is apparent that Stewardship Theory on this issue is underdeveloped. The puzzle then is whether the factors are all inextricably intertwined, consequent upon each other or independent of one or more of the other factors. If that puzzle can be solved then the relative impact of each pro-stewardship factor on the stewardship outcome can be understood and the factor or factors with the highest impact can be emphasised in the configuration of contractual relationships and a better stewardship outcome achieved.

2.3.2.2.1 Personal power and trust

This sub-section first assembles the Stewardship Theory literature regarding personal power and trust. Secondly the body of literature regarding inter-organisational trust is considered. Thirdly how important trust and personal power are to stewardship are evaluated.

Trust is a factor key to both Agency and Stewardship theories, with Agency Theory asserting that the agent is not to be completely trusted (Jensen & Meckling, 1976) and Stewardship Theory asserting that the steward can be trusted by the principal (Davis et al., 1997; Van Slyke, 2007). Early Stewardship theorists (Davis et al., 1997) identified trust as a behaviour not well accounted for in Agency Theory yet deserving attention because of the observed superior performance of the agent to whom trust is extended. Whilst Agency Theory relies on institutional power (vested in the agent by way of delegated authority) Stewardship Theory relies on personal power (influence derived from perceived expertise or affective relationships where individuals identify with each other) (Davis et al., 1997). Davis et al. (1997, p. 33) asserted that trust is a critical element of a high-commitment or involvement-oriented management philosophy which is “...more likely to produce Stewardship Theory relationships.” Van Slyke (2007) conceptualised trust as being a mutual expectation of reciprocity based on knowledge of the other party.

Stewardship Theory research has to date adopted the individual as the unit of analysis for the agent/steward role and largely concentrated on the factor of intra-organisational trust, with Van Slyke (2007) being the first to consider trust at the inter-organisational level which brings the unit of analysis to the organisation-to-organisation level. To extend that research the literature regarding inter-organisational trust is explored. The networks, conditions and mechanisms which contribute to inter-organisational trust were identified by Sydow (1998) in a comprehensive analysis of issues at the individual, inter-organisational and network levels. Sydow (1998) found that inter-organisational relationships, in particular trust, can be built and sustained by intentional actions in respect of the structural properties that constitute the network of organisations and also the relationships and processes at the individual and organisation levels. Alford (2009) identified the steward’s predisposition to act in the interests of the principal, explaining such action prompts reciprocation of trust from the principal and a consequent high-trust spiral and an increasingly better outcome for the principal.

Importantly, relationships characterised by trust have been found to be highly important in the governance of the planning, construction and operation of critical infrastructures. Edelenbos and Klijn (2007) sought to understand the importance of trust to complex inter-organisational decision-making networks, in

particular those supporting PPPs. Edelenbos and Klijn (2007) surveyed the literature as to the operation of trust, formed hypotheses and tested these using data gathered from the conception, planning, construction and operation of a ring road in the Netherlands. Edelenbos and Klijn (2007, p. 34) concluded that “...the value of trust lies in both handling uncertainty in complex decision making because other actors’ actions become more predictable...it also lies in enhancing the capacity for information exchange and innovation.” The literature surveyed and the ring road case study data led Edelenbos and Klijn (2007, p. 42) to conclude that trust can be developed by intentional actions but “...is very fragile and can easily turn into distrust.”

The findings of Alford (2009), Edelenbos and Klijn (2007), and Sydow (1998) that inter-organisational relationships can be built and sustained by intentional actions strongly support the Stewardship Theory (Davis et al., 1997; Van Slyke, 2007) contention that trust and the resultant personal power can be applied to increase stewardship behaviour.

The issue then is whether trust as a factor that promotes stewardship behaviour is something more than important — whether it is essential. Klijn, Edelenbos and Steijn (2009, p. 14) conclude “...that trust in governance networks is important for achieving better (perceived) outcomes.” It is reasonable to consider ‘better outcomes’ to be synonymous with stewardship. Alford (2009) asserted that trust is important in partnerships between government organisations and other organisations (not-for-profit and market) because it provides a mechanism for coordinating the actions of the organisations involved, thus reducing the transaction costs. Alford (2009, p. 4) then goes on to provide an explanation for the effects of trust, emphasising the power of trust to access motivations through intrinsic rewards and normative purposes. Returning to the Stewardship Theory literature, the seminal work of Davis et al., (1997, p. 33) asserted that “The issue of trust is a critical aspect of the high-commitment or involvement-oriented management philosophy.” which “...will lead to the emergence of behaviour that is more consistent with stewardship theory” (Davis et al., 1997, p.34). Van Slyke (2007) found that for public managers of contracts with not-for-profits trust was not the relational starting position but rather was developed over the progress of the contractual term and found that even then the use of trust by the public manager was congruent with an evolved principal–

agent relationship. At the same time, and in contrast, it was found by Van Slyke (2007) that the not-for-profits started in the relationship with a Stewardship Theory perspective and that they sought, and largely achieved, principal–steward relationships. Seen another way, the data gathered by Van Slyke (2007) showed that there was stewardship behaviour even though the principal (the public managers) did not take the position of trusting the not-for-profit steward. This finding of stewardship in the absence of trust on the part of the principal is consistent with the perspective of O’Leary (2007) that trust is not an essential condition for there to be cooperation.

In summary, Klijn et al., (2009) concluded that trust was ‘important’ for achieving better outcomes, Alford (2009) held that trust is ‘important’ in partnerships between government organisations and other organisations because it offers the possibility of reducing transaction costs, and Davis et al., (1997) positioned trust as ‘critical’ to a particular management philosophy, which in turn leads to the emergence of behaviour which is consistent with Stewardship Theory. However Van Slyke (2007) found that there was stewardship behaviour by not-for-profit providers of human services even in cases where the principal had not extended trust to the steward. No claim is made in the Stewardship Theory literature or broader trust literature that trust is essential to stewardship. Accordingly, whilst there is substantiation for the Stewardship Theory proposition that the extension of trust by the principal to the steward will result in a better outcome from the contractual relationship, there is a clear indication from the research of Van Slyke (2007) that trust is not essential for there to be stewardship. The remaining pro-stewardship factors will now be considered to understand the importance of those factors to achieving stewardship behaviour.

2.3.2.2.2 *Autonomy*

Stewardship Theory asserts that because extending the autonomy of the steward motivates the steward to deliver increased benefits to the principal autonomy is key to establishing the less controlling contract management arrangements which promote stewardship (Davis et al., 1997). This sub-section assembles the Stewardship Theory literature regarding autonomy. A principal might balance the greater autonomy advocated in Stewardship Theory with commensurate controls. However, Davis et al., (1997) and Tosi et al., (2003) caution that control can be

counter-productive because it signals distrust, lowering the motivation of the steward to work in the interests of the principal. Autonomy is seen as a logical consequence “...because he or she [a steward] can be trusted” (Davis et al., 1997, p. 25). Block (1996) argued that the autonomy of stewards should be extended as much as possible as they work in the best interests of the organisation, requiring little monitoring. Ott and Dicke (2000) contend that where control is required informal and intrinsic accountability mechanisms such as professional standards and peer reviews rather than legalistic mechanisms are appropriate. Such relaxed controls and accountability mechanisms would operate under the shadow of hierarchical authority (Scharpf, 1994) with stewards apprehending the possibility of failure to achieve stewardship resulting in the principal imposing controls and other prescriptions of Agency Theory. This Stewardship Theory model of minimal monitoring contradicts the experience of fully privatised water in England where control by heavy regulation of autonomous private operators was needed (Rees, 1998).

Stewardship Theory research in respect of the impact of autonomy has been limited. Assistance might be found in the literature concerning the relationship between government and government-owned, non-departmental public bodies (NDPBs) (e.g. government-owned companies or statutory corporations), as the relationship is similar, principally because NPM initiatives by government emulated the private sector. Thynne and Wettenhall (2004) analysed the issues surrounding freedoms and controls allocated by governments to their NDPBs and found that the government positioned the particular NDPB between freedom and control by determining a trade-off between effectiveness through managerial autonomy and political control (Thynne, 2003; Thynne & Wettenhall, 2004). Verhoest, Peters, Bouckaert and Verschuere (2004) conceptualised autonomy as having two dimensions: one the intended autonomy in respect of decision-making on policy matters and management matters, and the second the actual constraints (structural, financial, legal and interventional) on decision-making. Verschuere (2007) then surveyed 87 Flemish public sector organisations with respect to two key arenas of managerial autonomy, financial management and human resources management and found that it was rare that the intended model of disaggregation, autonomisation and results-based control was achieved. The learning then is that research that seeks to establish a causal link between autonomy and behaviour (e.g. stewardship) must

contain a method to establish the actual level of autonomy to distinguish between the claimed configuration, for example according to Stewardship Theory principles and the actual relationship (e.g. Agency Theory control).

A note of caution must be raised as to the concept of autonomy within the larger Stewardship Theory conceptualisation of the contractual relationship. Autonomy has been shown to be introduced to maximise the opportunity for the steward to carry out the contracted role. Autonomy is not about fragmentation or silos but rather the underpinning, core principle of the NPM tenet of “free managers to manage” (Pollitt & Bouckaert, 2004, pp. 165-167). A principal seeking to implement the tenets of Stewardship Theory must be alert to establishing a level of autonomy which is appropriate to facilitate the full integration of the system shared by the parties. The agent/steward being fully autonomous heavily restricts the possibility for the relationship to progress through the Integration Continuum (Keast, Brown & Mandell, 2007), from cooperation and then coordination to collaboration. This is highly important as coordination and collaboration are behaviours said by Stewardship Theory to be characteristic of principal–steward relationships.

However, this exploration of the pro-stewardship factor autonomy is for the purpose of understanding how important autonomy is to stewardship. It has been shown that autonomy does contribute to stewardship (Davis et al., 1997) and that autonomy relates to the pro-stewardship factor trust in two ways. The first is that autonomy is dependent upon the steward first being trusted by the principal (Block, 1993; Davis et al., 1997; Van Slyke, 2007) and the second is that if autonomy is increased then the consequent actions of the steward may engender increased trust on the part of the principal (Davis et al., 1997; Van Slyke, 2007).

In respect of determining how important autonomy is to stewardship it is proposed to consider the possibility of the null hypothesis; that is, that there is no possibility of a situation where the steward has autonomy and does not demonstrate stewardship behaviour. Such a scenario, where an agent/steward has autonomy but chooses to not act as a steward, is quite possible. Indeed Agency theorists warn against the likelihood of such opportunism and recommend tight control rather than autonomy. Another telling scenario is where the steward is subjected to substantial ongoing control, has no autonomy on significant matters but acts in the interests of the principal beyond mere contractual compliance; that is, acts as a steward. This

scenario is also quite possible. Having regard to these scenarios it is concluded that there is a high likelihood of autonomy not being essential to stewardship behaviour and begs the question as to whether autonomy might be more accurately characterised as a lower-order factor, perhaps one that is facilitative of other pro-stewardship factors — those which may be more important to achieving stewardship. Firstly, considering autonomy in the context of trust, Stewardship theorists (Block, 1993; Van Slyke, 2007) hold that trust is an antecedent of autonomy with there being evidence (Sydow, 1998) that the act of increasing autonomy signifies trust with the reasonable expectation that the agent reciprocate with further trustworthy behaviour which in turn may engender increased trust on the part of the principal (Davis et al., 1997; Van Slyke, 2007). Secondly, interrogation of the Stewardship Theory literature finds no suggestion that autonomy has any impact on shared values and norms. Thirdly, there is the suggestion of a link between autonomy and sense of responsibility but that link is through the granting of autonomy engendering trust which increases the sense of responsibility.

This examination has shown that autonomy may be a lower-order factor which facilitates the establishment of other pro-stewardship factors or a factor which emerges as a result of the operation of other factors. This thesis now considers the two remaining pro-stewardship factors to understand how important they are to stewardship behaviour.

2.3.2.2.3 Shared culture and norms

The term ‘shared culture and norms’ first appears in Van Slyke’s (2007) summary of the key Stewardship Theory literature where he lists the theoretical tenet that workers are empowered through the pro-stewardship factors. This section firstly examines the broader literature regarding organisational culture to set parameters as to the meaning of shared culture and norms. Secondly, the limited Stewardship Theory literature regarding shared culture is unpacked. Thirdly, how important this factor is to stewardship behaviour is evaluated.

In the broader body of organisational culture literature Schein (1985, 1990) contributed the seminal work identifying a hierarchy of three levels of organisational culture. The first is the immediately apparent behaviours and tangible *artefacts*. The second level is the professed *values* as evidenced by corporate publications and interviews with organisational representatives. The third, deeper

level, is the underlying *tacit assumptions* shared across the organisation. Schein (1990) characterised the first two levels, the artefacts and the values, as providing insights but being ‘flawed’ dimensions which provide no assurance as to whether they are salient in the culture. Schein (1990) concluded that tacit assumptions offer the best understanding of the actual organisational culture. Schein (1990) observes that the unconscious nature of these assumptions leads to their not being discussed, which leads to an immense difficulty for those who seek to change the culture.

Thus it is apparent that shared culture is not a factor which the principal can initiate readily by way of corporate publications or espousing values. However, longer-term perspectives and actions do impact the tacit assumptions that constitute the shared culture, with Davis et al., (1997) identifying the management philosophy which the principal (management) brings to the relationship as key to forming a shared culture that supports a principal–steward relationship. Davis et al., (1997) distinguished between Agency Theory control-oriented normative management philosophies and Stewardship Theory high-commitment and involvement-oriented normative philosophies and asserted that the operation of a culture and related management philosophy generates a self-fulfilling prophecy as to the nature of the culture in future relationships.

Van Slyke (2007, p. 164) described the underlying management philosophy as the “managerial starting point” and held that this managerial starting point differs between different types of services and markets. Van Slyke (2007) characterised government–not-for-profit human services contractual relationships with their strongly shared goals as having a much greater probability of reflecting the Stewardship Theory model than would contractual relationships in well developed markets such as refuse collection. Dicke (2002) observed that not-for-profit, charitable, human services organisations are assumed to hold altruistic core values and that if these values are shared with the government organisation as principal then the steward is likely to display stewardship behaviour. Block (1993) found that the inculcation of altruistic values within an organisation achieves a culture that supports and promotes steward-like behaviour. Stewardship theorists (Block, 1993; Davis et al., 1997; Dicke, 2002; Van Slyke, 2007) acknowledge that the principal benefits from, or is constrained by, their underlying management philosophy when applying

alternate conceptualisations as to the principal–agent relationship such as the high-commitment, involvement-oriented culture advocated in Stewardship Theory.

Davis et al., (1997) explored culture as a factor by which Stewardship Theory could be differentiated from Agency Theory, drawing on the work of Hofstede (1980, 1991), on cultural differences along two dimensions, power distance and individualism-collectivism. The power distance dimension describes the extent to which less powerful members of organisations within a country expect and accept that power and privileges are distributed unequally. The high power distance is thought to lead to agents rejecting the principal's authority in a way similar to the divergent goals of the self-serving agent described in Agency Theory and low power distance is held to be conducive to the development of a principal–steward relationship (Davis et al., 1997, p. 36). As the unit of analysis in this thesis is the organisation, the power distance between agent/steward and principal is the lowest possible. However, for all inter-organisational relationships, be they configured according to Agency Theory or Stewardship Theory, whether they achieve stewardship or they do not, there is no scope to distinguish between case studies. Accordingly there is no good purpose in further considering this dimension of culture.

Evaluating the second dimension of culture, individualism-collectivism, Davis et al., (1997) proposed that the disposition to individualism (i.e. personal goals over group goals) is characteristic of Agency Theory behaviour and the disposition to collectivism (i.e. subordination of personal goals and strong responsibility to group goals) is characteristic of Stewardship Theory. Collectivists have a very positive attitude towards harmony in groups, preferring long-term relationships and expending greater time and effort to establish relationships prior to a business transaction (Davis et al., 1997). Davis et al., (1997) developed the proposition that collectivist cultures are more conducive to the emergence of a principal–steward relationship.

However, as with much of Stewardship Theory, the explanation of the operation of collectivist behaviours is underdeveloped. Clarification of the disposition to collectivism (Davis et al., 1997) is needed. If the responsibility were to be to the group as distinct from the principal then there is the possibility of there not being stewardship of the interests of the principal. An example would be a group

comprised of collectivists employed by a child care agency who hold a strong view as to how services should be provided to the children in the principal's care, but that view being contrary to the policy and goals of the principal. The collectivists may support each other in not implementing the policy of the principal. The alternate scenario, where there is little collectivist behaviour but where the culture is that of implementing the policy of the principal and achieving the goals of the principal, suggests that shared culture which is not characterised by collectivist behaviours can still achieve stewardship. For that reason it is held that collectivist behaviour is not the only form of culture which may have a causal link to stewardship.

Having concentrated the focus of this exploration upon the culture shared between the agent/steward and principal the conceptualisation of the collectivist as characterised by strong responsibility to the principal comes into high prominence. Yet the Stewardship Theory literature does not make clear whether the responsibility factor (considered in the next sub-section of this thesis) leads to shared culture and whether shared culture has a causal link to stewardship behaviour. It reasoned that it is highly likely that sense of responsibility to the goals of the principal would be a key contributor to a culture shared between the contractual parties and which leads to a better outcome for the principal. If sense of responsibility were found to be a key element of the culture then there is the possibility that sense of responsibility is essential to the culture or indeed is the essence of the contribution of the steward to the culture.

To test whether sense of responsibility is essential to a shared culture that causes stewardship on the part of the agent/steward it is proposed to examine the viability of the null hypothesis; that is, that a culture where the steward has no sense of responsibility to the principal will nonetheless result in stewardship. Earlier in this thesis an examination of the literature in respect of the meaning of stewardship found that stewardship required that the steward actively act in the interests of the principal. The question then is whether the steward, in acting in the interest of the principal, could do so without having a sense of responsibility to the principal. Whilst the argument that a single instance of acting in the interests of the principal without there being a sense of responsibility could be made, ongoing, stable contractual relationships require a continual stream of actions, and particularly so in the instance of critical infrastructures. Accordingly the probable scenario would be

one of there being continual actions and decisions where the steward acts in the interests of the principal. Those actions on the part of the steward would be a key contributor to, or demonstration of, the culture shared between principal and steward. Accordingly, to maintain a culture in which the steward continually acted in the interests of the principal it is necessary that the stewards continually display a sense of responsibility to the principal. For that reason it is concluded that sense of responsibility to the principal is an essential element of the shared culture which has a causal link to stewardship.

Sense of responsibility to the principal has been concluded to be essential to the shared culture factor. This thesis seeks to understand the contribution of each pro-stewardship factor to stewardship and determine whether there is one factor that has the possibility of being highly important to there being stewardship and thus being worthy of particular focus in this research. Having regard to the conclusion that there could not be a shared culture which causes stewardship without there being a sense of responsibility to the principal it is concluded that sense of responsibility is distinctly more important than shared culture. This thesis now considers the impact of the responsibility factor upon the achievement of stewardship.

2.3.2.2.4 *Sense of responsibility*

Sense of responsibility (Dicke, 2002), as used in the Stewardship Theory literature, refers to an internal sense of responsibility on the part of the steward which leads to the steward acting accountably and achieving the principal's goals. The steward acts in a pro-organisational, collectivist way, values and goals are aligned, and the steward has a sense of responsibility to the organisation (principal) (Davis et al., 1997, p. 24). In addition, the exploration of the other pro-stewardship factors (trust, autonomy and shared culture) earlier in this chapter has signalled that sense of responsibility may have a more significant impact on stewardship than the other factors. This section firstly considers the Stewardship Theory literature regarding sense of responsibility. Secondly, it evaluates the importance of the sense of responsibility factor to the achievement of stewardship behaviour.

Responsibility as conceptualised in Stewardship Theory literature emerged from McGregor's (1960) identification of two distinct groupings of assumptions underlying managerial approaches. The first is Theory X, which is based on assumptions that people are lazy, passive, are not intrinsically motivated to work and

need to be controlled by management because they will not act in the best interests of the organisation (McGregor, 1960). Agency Theory, with its economic view of human nature and heavy emphasis upon control, has strong Theory X overtones (Tosi et al., 2003). In contrast, Theory Y, is based on assumptions that people are not passive, are intrinsically motivated and have a high capacity for assuming responsibility. According to Theory Y management (the principal) can arrange the work context, for example using empowering structures, so that employees can achieve their own goals by directing their own efforts toward organisational objectives. Davis et al., (1997) explained that “Subordinates in a stewardship relationship are reinforced by these intrinsic, intangible rewards (opportunities for growth, achievement, affiliation and self-actualization) and are motivated to work harder on behalf of the organization” (p. 28).

Davis et al., (1997) explored the then established theories of motivation having particular regard to the need theories and focused on the model of worker motivation: the Job Characteristics Model developed by Hackman and Oldham (1976). Hackman and Oldham (1976) identified three psychological states, *experienced meaningfulness of work*, *experienced responsibility for outcomes*, and *knowledge of actual results*, which can be attained or facilitated by factors such as skill variety, task identity, task significance, autonomy and feedback. Davis et al., (1997, p. 24) concluded that this model of work motivation is consistent with the assumptions of Stewardship Theory but that, as this conceptualisation of the motivation is predicated on the assumption of the individual worker having a strong growth need, there are some workers for whom the assumptions of the stewardship model may not fit. It would seem then that Davis et al., (1997) are inferring that if an individual does not attain one of the psychological states such as *experienced responsibility* then the stewardship model will not fit and the relationship should default to the high control/monitoring Agency Theory model.

Dicke (2002) was the first to adopt the term ‘sense of responsibility’ observing that sense of responsibility is subjective to the person, being closely allied with an individual’s personal conscience, values and loyalty. Dicke (2002), in conceptualising this internally held sense of responsibility as being directed to the principal, created a clear distinction from the principal–agent conceptualisation of responsibility which she defined as an accountability based on an obligation to

someone outside-of-self. Dicke (2002) observed that when organisations hold strong core public service values an internal sense of responsibility is created. 'Internal' in this use of the term referred to the sense of responsibility being generated at the level of the individual, as distinct from the organisation.

Dicke (2002) sought to test the argument that the Stewardship Theory concept of responsibility to the principal, together with shared value sets, would provide internal accountability methods for human services contracting. Dicke (2002) observed that there was a large body of research from a wide range of disciplines that showed the presence of strong core public service values (service to the community by organisations from the market, state and network sectors). Dicke (2002) hypothesised that if the not-for-profit employees held these values then there would be a convergence with the values of the government (the principal) and the attendant sense of responsibility on the part of the employees would constitute an internal accountability mechanism, resulting in there being a reduced need for external control mechanisms. Dicke (2002) found that the control methods in place were derived from the principal-agent perspective and that the not-for-profit practice of hiring students principally for their flexibility as to hours of work had displaced the selection of employees on the basis of public service values or sense of responsibility, thus not providing the anticipated internal accountability mechanisms.

Continuing the thread woven by Davis et al., (1997) and Dicke (2002), Hernandez (2012), in her substantial assembly of the knowledge surrounding the influence of structural and psychological factors on stewardship behaviours, sought to redress the paucity of knowledge as to the causal influence of organisational-and individual-level factors on stewardship behaviours. Hernandez (2012) categorised the structural factors into control systems and reward systems developing a Model of Stewardship Antecedents (p. 177), which established *psychological ownership* (as distinct from material ownership) of the beneficiaries of stewardship behaviour as a mediating factor between those structural and psychological factors and the achievement of stewardship behaviours. Further, Hernandez (2012) developed a strong argument that stewardship behaviour does affect a 'feedback loop' by reinforcing and enhancing the operation of the factors which established those same stewardship behaviours. Within the control system factors that generate stewardship behaviour, Hernandez (2012) outlined that the control systems be configured to allow

for a high degree of collaboration and a significant level of autonomy and responsibility. Hernandez (2012) conceptualises responsibility in several ways: the responsibility accepted by the individual, the sense of collective, (or shared responsibility), sense of obligation, and commitment.

This evaluation of the literature now turns to exploring how important a sense of responsibility is to the achievement of stewardship that there is a sense of responsibility. Davis et al., (1997) assembled the established theories of motivation with the impact of experience of responsibility for outcomes emerging from consideration of the model of worker motivation then advanced by Hackman and Oldham (1976). Hernandez (2012) examined both the actions which influence sense of responsibility and also the operation of sense of responsibility as an antecedent of stewardship behaviour. Whilst characterised by Hernandez (2012) as being established and cultivated by control systems sense of responsibility was also found to influence the cognitive and affective mechanisms that, in turn, drive stewardship behaviours. An example is the design of relationships within the organisation such that there is an authentic opportunity for leadership at many levels which Hernandez (2012) concluded engendered a sense of responsibility, both individual and collective. This dynamic of leadership and sense of responsibility is held by Hernandez (2012) to heighten the ‘other-regarding’ perspective of the steward, cultivating the individual’s shared sense of responsibility to consider multiple stakeholder perspectives including an intergenerational perspective to encompass the needs of distant future beneficiaries.

Thus the concept of sense of responsibility is interwoven throughout the structural and psychological factors which form the model of stewardship antecedents built by Hernandez (2012), suggesting the possibility that if there was no sense of responsibility on the part of the employee then there would not be stewardship behaviours. Put another way, if sense of responsibility and the closely related antecedents of stewardship behaviour, sense of obligation, collective responsibility and commitment were removed from the model established by Hernandez (2012) then there is a very low probability of the remaining control and reward systems resulting in stewardship behaviour. In considering the impact of the shared culture factor in the preceding sub-section it was argued that it was highly unlikely that there could be a shared culture which would cause stewardship without

the steward contributing a sense of responsibility to that culture. For that reason it was concluded that sense of responsibility to the principal was an essential element of a shared culture which has a causal link to stewardship. Building on that conclusion, it is reasoned that if there cannot be a shared culture which causes stewardship without there being sense of responsibility to the principal then sense of responsibility is distinctly more important to the achievement of stewardship than other aspects of shared culture.

In summary, this examination of the pro-stewardship factors sought to determine whether there is one factor that has the possibility of being highly important or essential to there being stewardship and thus being worthy of particular focus in this research so that it can be emphasised in the configuration of contractual relationships for privatised infrastructures. The pro-stewardship factor personal power and trust as extended to the steward by the principal was found to be not essential to there being stewardship as there was a reasonable possibility of the steward continuing to act in the interests of the principal notwithstanding the principal not extending trust to the steward. For the autonomy factor it was concluded that autonomy was a lower-order factor which facilitates the establishment of another pro-stewardship factor — trust. The factor shared culture was found to be dependent upon that culture containing a sense of responsibility on the part of the steward, positioning sense of responsibility to the principal as a higher-order factor and one which is possibly essential to the achievement of stewardship. In that way it might be a factor which distinguishes a steward from an Agency Theory agent.

Clearly it is important that this critical infrastructures research seek to understand how important sense of responsibility on the part of the steward is to there being stewardship behaviour. If that importance is understood then configuration of relationships can focus on that pro-stewardship factor and the actions that can be taken to increase that sense of responsibility. Selection of parties with which to contract can focus on their demonstrating sense of responsibility. To provide that focus it is necessary to obtain evidence in the following key areas:

- day-to-day behaviour and extraordinary events that will demonstrate sense of responsibility; and
- actions by the principal or steward to increase or support the steward's sense of responsibility.

The following section distils the issues and literature which have been considered and draws together the precise questions which will be addressed in the research.

2.4 CONCLUSION

The catalyst for considering Stewardship Theory was the concern that privatised critical infrastructures are being managed in a way that creates political risk for the government or which fails to meet public values such as value for money, quality or adequacy of service. The literature attributes this failure to the privatisation initiatives of government which, amongst other things, introduced Agency Theory-based principal-agent relationships between government and the private contractors who operate and maintain the infrastructures. These relationships may be inappropriate for the achievement of stewardship because of the constraints imposed by Agency Theory conceptualisations of the behaviour and capabilities of the agent. The identification of these constraints provoked the search for a theory which provides a conceptualisation of the relationship which leads to stewardship of the infrastructure by the contractor.

Governments privatise infrastructure in the expectation that the market sector will bear both financial and political risk. The community has not accepted that abrogation of the political risk, holding governments accountable against public values as their steward of the infrastructures. The concept of stewardship is a term that was widely used but loosely defined, as was the role of a steward. Drawing on the literature, this thesis forms the following definition of a steward:

A steward is an agent, contractor or employee who has been engaged on the agreed basis of having the requisite knowledge and skills and exercising initiative and insight to actively act in the interests of the principal.

Key to this conceptualisation of stewardship is the expectation that the steward must actively protect and advance the interests of the principal. The steward must not put their own interests ahead of those of the principal. This concept of stewardship applies to government in its relationship to the public and by virtue of privatisation to those members of the market sector who enter into contracts with government. It is against this criterion of stewardship that this thesis explored the

literature regarding Agency Theory for the constraints or limitations which might explain the failures in stewardship of infrastructure.

Agency Theory presented as offering a useful way of explaining relationships where the parties' interests are at odds, offering a conceptualisation of the relationship which facilitates the parties being brought more into alignment through well planned monitoring, control and extrinsic incentives (Davis et al., 1997). However, where the goals and interests of the parties are aligned, application of the assumptions that are fundamental to Agency Theory would constrain the principal from achieving a better outcome from the agent. In that way, assumptions as to the behaviour of the agent that will lead to goal conflict, that information asymmetry will prevail, that the agent is risk-averse, or that there will be agency loss impose the quite limiting Agency Theory conceptualisation of the role of the agent and result in there not being a principal–steward relationship.

Stewardship Theory was explored for its capacity to address the constraints resulting from the application of Agency Theory and to provide a possible alternate conceptualisation of the relationship — one which achieves stewardship outcomes. Two key tenets of Stewardship Theory were examined. The first is that the agent will act as a steward, not departing from the interests of his or her organisation rather than acting with self-interest (Davis et al., 1997; Van Slyke, 2007). It was concluded that Stewardship theorists are offering a conceptualisation that is likely to provide a better outcome for the principal than does Agency Theory but that the literature as to the behaviour that constitutes stewardship is underdeveloped and thus unclear. The proposed research will confirm the operation of the tenet that the steward will not depart from the interests of the principal and will seek to better define the behaviour which constitutes stewardship. The second tenet, that if the factors (pro-stewardship factors) trust, autonomy, shared culture and norms, and sense of responsibility (Davis et al., 1997; Van Slyke, 2007) are emphasised then an agent will act as a steward was explored by way of a detailed consideration of each factor. This thesis concluded that sense of responsibility to the principal on the part of the steward was possibly essential to stewardship behaviour being achieved.

Public values were found to be the essence of the public's expectations as to the performance of critical infrastructures. The satisfaction of public values

attaching to a specific infrastructure is used in this research as a measure of the achievement of stewardship of that infrastructure.

As observed by Van Slyke (2007), Stewardship Theory remains acknowledged but largely untested. More telling for those seeking better stewardship of critical infrastructures is the conclusion of Hernandez (2012) that “past theorizing has not been able to provide organizations with prescriptions on how to generate and sustain stewardship.” This research seeks to develop the literature and to achieve findings of practical relevance to government and industry practitioners by pursuing three key issues:

1. the extent to which a steward acts in the interests of the principal;
2. the importance of the factor sense of responsibility to there being stewardship; and
3. the actions available to either the principal or steward to increase or support the steward’s sense of responsibility.

In addition there are two key aspects of the proposed research which have to date received little attention in Stewardship Theory research. The first is the steward being a commercial ‘for-profit’ entity rather than a not-for-profit human services provider as was the case in the research of Dicke (2002) and Van Slyke (2007). The second is the steward being an organisation as distinct from an individual (Davis et al., 1997; Donaldson, 1991). These issues require a research method which will provide data as to the characteristics displayed by actual stewards and the actions which contribute to those characteristics. Accordingly, a research methodology which includes gathering data from individuals who comprise principal and agent organisations by way of interview is appropriate.

The purpose of this research is to understand whether an organisation contracted to government can act as a steward and whether governments can take actions to configure the relationship with that organisation to increase stewardship behaviour. To do this it is necessary to work with a number of case study principal–steward relationships drawn from privatised critical infrastructures.

Specifically this empirical case study research seeks to answer the following questions:

- RQ 1:** *To what extent will a steward act in the interests of the principal?*
- RQ 2:** *How important is it that the steward feels a sense of responsibility to the principal for the steward to act in the interests of the principal?*
- RQ 3:** *What actions are available to the principal to increase the steward's sense of responsibility and achieve stewardship of critical infrastructures?*

The focus of this thesis has moved from the broad explorations of the literature surrounding privatisation, Agency Theory and Stewardship Theory, narrowing in on the opportunities offered by better understanding the operation of Stewardship Theory and the pro-stewardship factor sense of responsibility and setting the boundaries of the research by determining those three research questions. With the objective of answering those questions, data will be gathered through case studies. This thesis will now narrow that focus to the identification of suitable candidate case studies, giving particular attention to the privatised urban water services sector.

Chapter 3: Literature – Infrastructure Privatisation

3.1 INTRODUCTION

Chapter 2 considered the demand by the community that governments achieve better stewardship of critical infrastructures and concluded that Stewardship Theory offers the potential to provide an alternate conceptualisation of the relationship between government as principal and private organisations as stewards — one which achieves stewardship. As Stewardship Theory was found to be underdeveloped it was concluded that empirical research into the behaviour expected of a steward, how important the pro-stewardship factor sense of responsibility is to there being stewardship, and the actions to increase that sense of responsibility in the context of privatised critical infrastructures must be carried out. In this chapter typical forms of privatised critical infrastructure contractual relationships are examined utilising examples of those typical forms drawn from urban water services and then the suitability of the urban water sector to provide candidate case studies for this research is explored.

Before commencing the examination it is proposed to set criteria that can be applied to assessing the suitability of case studies for this research. For conclusions to be drawn from the data collected through case studies, variables other than the pro-stewardship factors and contractual forms must be eliminated or identified. To maximise the general application of learning from this research it would be ideal to carry out case studies in an infrastructure sector where there is substantial privatisation. Urban water services (drinking water and sewerage) throughout the world are subject to a range of similar forms of privatisation, constructed of similar infrastructure and outputs have quality standards which are highly measurable and invariably published publicly due to regulatory requirements (Funnell et al., 2009; Rees, 1998). Because reticulated drinking water and removal of waste water is fundamental to the functioning of urban societies anywhere (Graham & Marvin, 2001) there is a strong likelihood of a consistent set of public values. Urban water services have been subjected to the full range of forms of privatisation: outright sale to the private sector, joint ventures including various forms of PPP arrangements and

alliances, concessions, and leases and management contracts. It is assumed that privatised water services as a sector will have few variables outside the forms of contract and offers the potential to capture data which will be recognised as highly reliable.

As organisations which agreed to participate in the research did so on the basis of not being identified care has been taken in this chapter to not provide information which might, in conjunction with the data set out in later chapters of this thesis, identify participant case study organisations. For that reason the following sections of this thesis will not describe individual systems.

This chapter reviews the various forms of contracts for privatised urban water services as examples and, in *Section 3.3 Conclusion*, the suitability of these forms of privatised water governance as candidate case studies is evaluated.

3.2 FORMS OF PRIVATISED WATER CONTRACTS

The stewardship of water services infrastructure is currently performed through governance forms involving a mix of public and private organisations, each fulfilling one or more roles; that is, policy, ownership, operation or maintenance. The focus of this research is on that part of the governance arrangement which carries out the functions of ownership, O&M as established by the contractual relationship between the steward (the private operator) and the government as principal.

The four typical forms of privatised water contracts are:

- full divestiture by government of its ownership of the system to a private entity;
- partial divestiture/joint venture/alliance;
- concession, being a contract to provide services that confers ownership and revenue rights on the private entity; and
- leases/management contracts.

There is no comprehensive assessment of the extent of privatisation of water services in developed countries. However, a search of the literature has revealed an absence of uniformity as to the extent of privatisation with the data suggesting the operation of other factors within each nation. The results of that search are as follows:

- Australia: 21% of water and 6% of sewerage is privatised (Owen, 2001).
- England and Wales: all water services are privatised (Birchall, 2002; Kay, Kassim, Pickernell, & Brooksbank, 2007).
- France: 80% private sector participation (Reynaud, 2007).
- Netherlands: 27 water supply companies, three are private (Schwartz & Blokland, 2002).
- United States: 5% of the population has private water providers (Haarmeyer & Coy, 2002).

The choice made by countries as to the contractual form for privatised water has been characterised by countries not adopting the full range of typical forms but rather one form being dominant in each country. Examples would be England with full-divestiture being highly dominant and Australia where joint ventures and management contracts dominate. The contractual forms utilised in all countries are explored in the following section which is structured around the four typical forms of privatised water governance identified by Rees (1998).

3.2.1 Full divestiture

Full privatisation is the divestment by government of its ownership of assets; in this case the transfer of the ownership of the water system to private companies and the responsibility for all operations, maintenance, revenue raising and investment (Rees, 1998).

The extent of full privatisation of the world's urban water systems has been limited with much of the literature regarding the privatisation of water services focusing on the 1989 sale (or divestiture) in England and Wales of 18 (now 15) water-only and 10 combined water and sewerage utilities by an open market process (Birchall, 2002). Licences to operate for 25 years were granted and a complex and expensive regulatory system anchored on three separate oversight bodies (Funnell et al., 2009) was established. In the English/Welsh model the private companies have major limitations upon how they conduct their business, constraining them on the setting of prices, investment decisions, the choice of raw materials, the disposal of assets, and merging and restructuring (Rees, 1998).

The heavy regulation deemed commensurate with the monopoly power and functions of the private companies (Rees, 1998) has impacted negatively on the English Government. Government is burdened with the significant ongoing cost of the regulatory regime and cannot fund that from revenue generated by the asset (the water system) as the government no longer owns the asset. Also, government has incurred political risk as the powers, discretions and lack of transparency on the part of the economic regulator have resulted in allegations of opportunism, condemnation by consumers, and investors losing confidence as to cost recovery (Munssen & Williamson, 2002).

Full privatisation of water with its divestiture by government of the water system assets has led to general consensus among policy-makers that whilst governments may sell telecommunications and electricity utilities, "...water is unavoidably social in nature evoking political emotions like no other issue" (Prasad, 2006, p. 669).

The full divestiture form has not been a popular option in water sectors largely because of the need to accompany full privatisation with continued public regulation (Rees, 1998), the cost and political risk attached to that regulation, and the political emotions attached to water services by the public. However, the question as to whether a fully privatised water system would be suitable as a candidate case study remains. Superficially the absence of either a principal-agent or a principal-steward contractual relationship would suggest that it would not be suitable. Yet the fully privatised water services as stewards may achieve stewardship of the infrastructure as measured against public values and may act in the interests of the government and may have an internal sense of responsibility to the government. It is concluded that the fully privatised form would offer a rich source of data to understand stewardship behaviour and allow comparison with other case studies in the form of contractual relationships.

3.2.2 Partial divestiture/joint venture/alliance

Partial divestiture can take forms such as a government selling a partial shareholding in a 'corporatised' enterprise or the creation of a joint venture company with the private sector (Rees, 1998, p. 99). The World Bank (2010) summarises the key features of joint ventures involving infrastructure as:

- In the case of an existing utility, shares in the utility are divested to the private sector.
- The level of share ownership will differ depending on whether the government is seeking to get the project off the balance sheet and whether the government wishes to retain management control of the utility. Government may retain control, or even negative veto power over certain management issues, even though it divests a majority of shares.
- The O&M functions are delegated to the private operator through a management contract.
- It is also possible to have a joint venture in the form either of:
 - a partnership (an arrangement with profit sharing between partners) created for a specific purpose — no separate legal entity is created and each of the partners continues with full legal responsibility for the project; or
 - a contractual consortium arrangement in which the parties contract to work together on a specific project; there is, however, no concept of a sharing of a pool of profits as there is with a partnership — each party is remunerated for specific services provided to the consortium and no separate legal entity is created.

This partial-divestiture/joint venture model has been used to a limited extent for water services O&M in Australia, with there being an urban water system operated by a joint venture comprised of a government corporation and one national and one international utilities company.

A related mixing of sectors has emerged in the form of alliances between government and specialist contractors, principally for the construction of infrastructure (Walker & Hampson, 2003). Alliance contracts are an increasingly prevalent feature of water utilities, often being used to deliver O&M work, customer service or capital expenditure activities in Australia (National Water Commission, 2011), suggesting that the term ‘alliance’ should be explored to determine which of the typical forms of water governance, established by Rees (1998) and utilised as the framework for this section of the chapter, it most resembles. Alliances are distinguished from joint ventures and partnerships in that an alliance is built on an

explicit ‘no-disputes’, ‘no-liability’ framework and a far greater emphasis upon teaming than these other relationships (Davies, 2008, p. 4). The alliance form of contract was developed as a response to the experience of traditional contracts which were typically incomplete in their specification of outcomes required in the comparatively distant future encompassed in their long contracted period (Rahman & Kumaraswamy, 2004; Walker & Hampson, 2003). Davies (2008, p. 3) found that typically alliance contracts:

1. share risk equally between customer and supplier;
2. include a ‘no-disputes clause’ which prohibits recourse to external disputes resolution (including litigation);
3. preclude liability between alliance participants for loss, damage or negligence; and
4. provide that all transactions are of an ‘open book format’, and all cost escalations or savings are shared between the parties.

In the public sector context “...the project team is integrated; it is required to act in good faith, with integrity...and make unanimous decisions and recommendations on all key project issues.” (Department of Infrastructure and Transport, National Alliance Contracting: Policy Principles [NACPP], 2011, p. 3). The alliance contract is typically structured to incentivise the parties to work quickly and collaboratively to resolve issues as they arise and work cooperatively to complete the project on time and within budget (NACPP, 2011), suggesting a strong alignment with the cooperation and collaboration emphasised in the Stewardship Theory conceptualisation of the contractual relationship.

In summary, the forms of partial divestiture (joint venture and alliances) are used in Australia to a sufficient extent that there is a high probability that suitable candidate case studies will be available.

3.2.3 Concession

Concession (or franchise) arrangements have been used for providing infrastructure for hundreds of years. Concessions are often granted as build-operate-transfer (BOT) contracts or BOOT or rehabilitate-operate-transfer (ROT) arrangements (Kerf, Gray, Irwin, Levesque & Taylor, 1998). These forms of

concessions are distinguished by the feature that the infrastructure as constructed or taken over by the concessionaire is owned by the concessionaire until transfer (back) to the government, together with operating rights, at the end of the period of time stipulated, for example the 99 years stipulated in the Suez Canal contract (Smith, 1999). Ownership is particularly important for both parties as the ownership may be accompanied by rights to carry out certain non-core but profitable commercial activities such as property development (Smith, 1999), leading to the overall project being more likely to be viable. The concession form of contract can provide for the service assets to remain state property but for the concessionaire to have exclusive usage and complete responsibility for operations, system maintenance, capital investments and revenue collection over an extended period (25–30 years or more). The *affermage* form of concession contract, which is predominantly used in the water sector in France, not only provides that infrastructure ownership remain with the government entity but also places the responsibility for investment with the owner (Hall, De la Motte & Davies, 2003). Concessions as highly autonomous monopolies require regulation for the same reasons as the fully divested model (Rees, 1998).

Modern governments perceive benefit from concessions in their capacity to bring competitive pressures to industries or services which are natural monopolies (such as water distribution). The concession documents are used to specify the rights and obligations of the private firms/companies and the tender process is used to create competition *for* a market in the circumstances where competition *in* the market (the monopoly provider has no ongoing competition) is not operating (Kerf et al., 1998). Limiting the initial term of the concession, combined with the opportunity for extensions based on performance and the advantage to the concessionaire of being the incumbent at the end of the term re-bid, encourages the concessionaire to perform well during the term. The availability of additional work for the same government entity or similar entities again encourages the concessionaire to perform well and maintain reputation, whilst also providing a greater number of opportunities for competition.

In Australia there is one urban water system that has been put to an *affermage* contract and an increasing number of BOT, BOOT and ROT contracts for operation of elements of water systems such as sewerage treatment plants, water filtration plants and desalination plants. These are not insignificant enterprises, with one water

filtration plant operator receiving annual payments that are more than the combined annual operations, maintenance and capital budgets of several urban water systems in Australia.

In summary, the concession form of privatised contractual arrangements has been established as one of the principal forms of privatisation of critical infrastructure throughout much of the world, and to date has been used in Australia to a limited extent. As the concession form is representative of a significant proportion of water privatisations throughout the world it is highly important to the usefulness of this thesis that the case studies utilised in this research include the concession form of contract.

3.2.4 Leases and management contracts

The remaining typical forms of water contracts, leases and management contracts, are not designed to provide private capital for infrastructure construction or maintenance. Most leases provide funding by way of the private companies collecting charges direct from users. This often creates tensions between public values such as affordability and accessibility, particularly in the context of a monopoly provider and price guarantees by the government to the provider over a relatively long term such as 25–30 years. Management contracts are for a shorter duration, usually five years, where the private company is only responsible for O&M with the government collecting user charges. Service contracts are typically single-function contracts to perform a specific service, for example renovate a pipeline, or read or install meters (Rees, 1998). The right to contract being at risk at the end of a relatively short term (3–5-year contract), together with the contracted-out functions usually being those for which there is a market of competing providers, leads to efficiency in use of public funds and better alignment of the service with public values.

The inclusion of leases or management contracts in the case studies utilised in this research was problematic. The concession form of privatisation is itself a form of lease and the form of lease most suited to the O&M of water systems because of the long-term nature of construction and maintenance programs and water services being a natural monopoly. Accordingly there are no notable examples of leases in water in Australia (with the exception of the concessions touched on in the preceding section). In respect of management contracts these are correctly traditional contracts

whereby the ‘doing’ of a function is carried out by a private organisation and no assets transfer to the private entity. The management contracts, and to a lesser extent leases, appear to have been included in the list of forms of privatisation created by Rees (1998) for completeness and to allow ready comparison and distinction.

No leases or management contracts were included in the pool of candidate case studies.

3.3 CONCLUSION

The purpose of this chapter was to examine the typical contractual forms for privatised water services to understand the nature of those forms and to determine whether there is a sufficient number of candidate case studies that will allow the exploration of Agency Theory and Stewardship Theory behaviours.

The range of forms of privatisation of critical infrastructures — full divestiture, partial divestiture (including joint ventures and alliances) and concession forms of contract — were found to be present in the Australian urban water services sector. The exception is the full divestiture/fully privately-owned and operated form which has not been adopted in Australia and has been adopted to a very limited extent elsewhere in the world. For that reason this research proceeded without the inclusion of a case study that provided an example of a fully privately-owned water system. The Australian water services sector provided case studies suitable for this research.

The process for the selection of candidate case studies and in turn the gathering of data from each case study is set out in the following chapter, *Chapter 4: Research Approach*.

Chapter 4: Research Approach

4.1 INTRODUCTION

Earlier in *Chapter 2 Literature Review*, the requirement by communities that governments steward critical infrastructures was established and the increasing reliance of governments upon private companies to operate and maintain those critical infrastructures was examined. Some privatised operations were found to be failing to meet the needs of the community. There was some evidence that the private operators who had contracted with government were acting against the interests of the government and the community. It was concluded that there was a high probability that this behaviour was caused by the underpinning contractual relationships which were configured in accordance with Agency Theory prescriptions. The use of Stewardship Theory as a complement to Agency Theory to provide ways in which the behaviour of private companies as agents can be shaped to achieve better stewardship of infrastructures was proposed. The Stewardship Theory pro-organisational attribute sense of responsibility (Dicke, 2002; Hernandez, 2012) was identified as being highly important (and possibly essential) to achieving stewardship on the part of the agent (the private company).

The largely theoretical nature of Stewardship Theory to date and its underdeveloped state suggested that this thesis conduct empirical research utilising case studies to explore the actual experience of stewardship (or otherwise) of typical forms of contractual relationships. The data collected from each case study was examined on a case-by-case basis and the findings for each are set out in *Chapter 5: Analysis*. The findings were in turn analysed by way of a cross-case comparison and conclusions as to the contribution to theory and practical knowledge are reported in *Chapter 6: Discussion*. Those processes were carried out within a framework of themes and factors which retained the structure and focus established in the research questions. Through that design the methods delivered findings which directly addressed the objective of this thesis; that is, understanding the potential of Stewardship Theory to inform the configuration of contractual relationships to achieve stewardship of critical infrastructures.

This chapter first outlines the design of the case study method, paying particular attention to the design of the data collection approach and the experience of the administration of the data collection and analysis processes. Secondly, the steps taken to ensure research integrity and data quality are explained and the limitations of the research methods are discussed.

4.2 THE CASE STUDY METHOD

Because of the need to explore the actual behaviours of parties within the privatised contractual relationships and to draw out from the parties their perceptions as to the sense of responsibility held by an organisation as agent or steward, the multiple case study method was chosen. The requirement was that this empirical data be drawn from examples of different, typical contractual configurations (e.g. the alliance or the concession) to gather data in respect of the individual configuration and for the purpose of comparison between typical configurations. In addition, the multi-case study method provides broad data to assist in the validation of findings from individual case studies and to provide some generalisability of findings (Stewart, 2012).

This multi-case comparison fell into three tracks consistent with the model identified by Stake (2006) namely the identification of themes in each of the cases, the identification of factors and the cross-case analysis. As will be explained later in this chapter these tracks were approached on a largely sequential basis; however, the latter tracks, particularly the cross-case analysis, identified issues which caused the revisiting and adjustment of the themes and factors.

This research proceeded on the basis that the collection of data into these themes and factors would be structured within the areas covered by the three research questions: stewardship behaviour, sense of responsibility, and the actions which increase that sense of responsibility. This structure within a structure established a template which forced a rigorous examination of each item of data, and in turn the allocation of that data to one or more factors in whichever themes the factor had been positioned.

4.2.1 Data collection approach

Three data collection sources common to each case study were utilised. The first was the literature where the individual water services infrastructure had been the

subject of scholarly examination. The second was an archival document study. The third was a structured informant interview study.

4.2.1.1 Literature regarding case study systems

The availability of data regarding certain aspects of the operation of three of the case study water systems in published articles became apparent as the researcher surveyed the broad body of literature and prior to the identification of Australian urban water systems as suitable case studies. The five articles review a part, or the whole, of the operations of the case study and the data contained in those articles contributed to the research in three ways. The first was as an additional source of data, independent of the archival document study and informant interview study. The availability of such an additional source of data influenced the choice of the case studies covered in the literature. The second was to contribute to the development of the initial themes and factors and the consequent informant interview questions. The third was as a source of data explored in the development of findings for the individual case studies and which was re-examined in the cross-case analysis.

4.2.1.2 Archival document study

The archival document study was approached as a foundation methodological strategy. The data collected through this study was used as the basis for findings plus it was used to prepare the researcher for the forthcoming interviews for each case study. In addition, concerns as to the possibility of bias in the data collected through the semi-structured informant interviews demanded that the proportion of data which was sourced from archival documents be maximised. Further, a strategy of seeking out every possible pertinent document generated by entities independent from the case study organisation was adopted to maximise the credibility of the data.

Archival data was available from a broad range of public sources, in particular annual reports, strategic plans, public tender process documents, regulators' reports, reports of Auditors-General, newspapers and media reports. Documents which were published regularly (for example annual reports and water quality reports) covering each of the water systems were obtained for the 2011–12, 2010–11 and 2009–10 years.

The water services sector can be characterised as having a high level of transparency as to its core activities, the provision of safe drinking water and the safe treatment of waste water, reflecting the importance to the public of values around efficient use of public resources and quality of customer services (including environmental outcomes). In addition one case study was the subject of a Royal Commission (and subsequent review of the implementation of the recommendations of the Commission) regarding water contamination events, providing documents which were highly relevant to the stewardship of that water system. That documentation also provided independent expert comment about standards which had been adopted across the Australian urban water services industry.

The archival data was collected in two stages. The first stage brought together descriptive data such as the demographics of the entities which comprise each water service and data as to the legal form of the entities. The data were collected in a structured manner using a standardised template. The second stage involved the collection of data relevant to the research questions and served the purpose of informing the development of the initial themes and factors and the consequent informant interview questions. The archival data was again interrogated in the data coding stage subsequent to the informant interviews for each case study which is explained in *Section 4.2.2 Administering the research design*.

4.2.1.3 Informant interview study

This section explains the rationale for choosing the semi-structured interview tool and then the approach taken in the development of the interview questions. Finally the interview protocols and the use of the protocol document, together with the testing of the protocol, are explained.

4.2.1.3.1 Rationale for informant interviews

The choice of interview tool was driven by the formative stage of Stewardship Theory and the need to collect and analyse data regarding the behaviours and attributes of organisations and individuals. In addition it was necessary that the method be open to the possibility of insights or factors to date not identified in the literature or the archival documents. In contemplating the options as to collecting data from individuals the questionnaire was thought not to be open to grasping possible insights or factors beyond those identified to date in the literature and archival study.

The informant interview method was chosen because of the necessity to collect data directly from those experiencing that behaviour (Shah & Corley, 2006) and the capacity of the interview to reveal the ‘realities’ experienced by informants and capture nuances and insights to facilitate the further development of theory. It was acknowledged that the particular interview method must control for the multiple realities (Sale, Lohfeld & Brazil, 2002) of informants who participate in organisational and individual relationships and that it was highly important to this research to understand the realities of each informant (Brower, Abolafia & Carr, 2000). These factors directed this research towards ensuring that informants were chosen such that their role, and thus their evidence, intersects with that of informants from the other parties in the contractual relationship. This technique allowed the validation of interview data, by way of triangulation (Jick, 1979) involving data gathered between interviews and that collected through the archival document study.

4.2.1.3.2 Interview protocol

Consequent upon the interrogation of annual reports and other documents the researcher concluded that the persons most likely to be able to inform the research were executives and managers from the government and private entities. With those candidate informants in mind the Interview Protocol (Appendix A), including the interview questions, was constructed having regard to the literature and archival study data.

The Interview Protocol document contained the Consent Form covering the requirements set by the Queensland University of Technology (QUT) Human Research Ethics Committee, an explanation of the purpose of the research and the interview questions. Those questions were formed to allow a semi-structured interview of 45 minutes to one hour duration.

4.2.1.3.3 Confirming the research design

First the Interview Protocol was put to senior government officers as surrogates for the water industry informants seeking their comment as to the clarity of the questions, and likely effectiveness of the interview process. Second, the overall design and questions were put to representatives of the Cooperative Research Centre for Infrastructure and Engineering Asset Management (CIEAM) and the Australian Asset Management Collaborative Group (AAMCoG) as infrastructure

industry members and acknowledged research scholars. The Interview Protocol was adjusted in accordance with suggestions from the three groups were adopted.

Accordingly a design was formed which, through the case studies, provides knowledge of the lived experience of stewardship (or not) of critical infrastructures by private entities, while still providing assurance as to the validity of data by gathering data from a sufficient range of sources.

4.2.2 Administering the research design

The research methods were administered by a single researcher, the author of this thesis. Risks emerging from having only one researcher administer the research methods, namely bias and the possibility of missed insights, were formally identified and the steps taken to mitigate these risks are explained throughout this chapter.

Having established the detail of the data collection methods, the methods were applied to the case studies and in turn the cross-case analysis was carried out. This section sets out the process applied in administering the research methods, highlighting the iterative approach that emerged as the data from each case study were interrogated. Key elements of this explanation are the ethical considerations, the determination of the case studies, the process for conducting the interviews and the analysis of the data.

4.2.2.1 *Ethical considerations*

As the thesis author is an employee of the Queensland Audit Office, water systems within Queensland were considered not eligible as candidate case studies in order to obviate the possibility of a perceived conflict of interest. The proposed research and methods were submitted to the QUT Human Research Ethics Committee with the research being considered to be low risk and considered as meeting the requirements of the national Statement on Ethical Conduct of Research Involving Humans (QUT Ethics Approval Number 0900000931). In acknowledgement of the commercial sensitivities of each case study organisation and the close-knit Australian water industry the needs of organisations and individuals as to confidentiality was anticipated in the design of the informant interview study. To achieve informed consent template documents were used in a stepped process which both allowed the organisation or individual to participate or decline and provided documented agreement by the organisation or individual in order to protect the

interests of the participants. Each candidate organisation was provided with detailed information as to the proposed research by way of a standard email and attached Participant Information document (Appendix A). Informants were provided with a written Interview Protocol before the interview commenced (see Appendix A). That document contained the standardised interview questions and is prefaced by a Consent Form which explains the research. Before commencing the interview questioning the written consent of each interviewee was obtained by way of their signing that page. To address the issue of the need for confidentiality and the risk attributing adverse comments to particular participants, an organisation and informant de-identification strategy was put in place and ethics approval was granted on that basis prior to the schedule of informant interviews commencing.

4.2.2.2 Determination of the case studies

Proceeding from the body of candidate case studies identified as suitable in *Chapter 3: Literature — Infrastructure Privatisation*, the Australian candidate case studies with their broad offering of forms of privatisation were examined. The criteria for case studies developed in Chapter 3 — substantial privatisation, commonality between the systems as to the public values attached to the infrastructures, and that other than the form of the contractual relationship there is no significant variable which has the potential to diminish the comparability and translatability of findings — were applied to these candidate case studies. The focus of this purposive sampling was narrowed by the application of the most-similar/most-different case approach (Przeworski & Teune, 1970) where the variable was the form of the privatisation contractual relationship, for example alliance or concession. Having grouped the candidate water systems according to the privatisation type the most-different approach was taken with the objective of ensuring the sample represented as broad a range of forms of privatisation as was possible. Seven urban water systems providing a broad range of forms of privatisation and some redundancy by way of similar case studies were identified. One candidate water system was the subject of strained relationships between the contracted party and the government in the lead up to renewal of the long-term contract due in June 2011. Tentative support for this research from the government entity was formally withdrawn in May 2011. The remaining candidate case studies were reviewed against the criteria of data being available by way of documents

published by independent bodies or by way of published literature pertaining to the following four water services. The following four case study services were chosen because of the high level of availability of data from independent bodies and having regard to the balanced mix of contractual relationships as set out in Table 4.1.

Table 4.1 Case study water services

Urban water service	Contractual arrangements underpinning relationships
Case Study A	An alliance comprised of the government entity responsible for the distribution and retail services for drinking and waste water and a consortium of two companies (which are subsidiaries of companies providing services worldwide) pursuant to an alliance agreement to perform O&M and some capital works for 10 years.
Case Study B	A joint venture by way of 50% ownership of each of two partnerships (distribution and retail) by the government entity responsible for the distribution and retail services for drinking and waste water and other utility services, and one international company for the distribution partnership and one ASX listed company for the retail partnership for the O&M and some capital works for water pursuant to a formal agreement for 20 years.
Case Study C	Two identical contracts between a government entity and an international contracting company for one half of a metropolitan area, and between the government entity and an international engineering and property services company for the other half of the metropolitan area, for the delivery of O&M services for the drinking and waste water services. The contracts were put to tender after seven years then let and extended for a further total 10 years which ended in 2012.
Case Study D	Two identical BOOT contracts for a term of 25 years to construct and operate drinking water filtration plants. In one contract a government entity has contracted with an international utilities company to construct and operate a filtration plant providing approximately 75% of the requirements of a large metropolitan area. The second

	contract is with an international utilities and transportation company to construct and operate two smaller filtration plants.
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Each of these case studies was rich in secondary data and, as they share a focus on O&M, allows comparison across case studies. Case Study C offers an example of two alliance contracts established in the mid 1990s for the same services to adjacent geographical areas with the added benefit of the government entity having formally identified the shortcomings of the alliances; during 2011 the government went to the market seeking participants for a replacement, single alliance. This evolving model, when contrasted with Case Study A (also an alliance), was thought likely to offer clear insights into actions which have a strong impact on sense of responsibility and satisfaction of public values such as service quality and value for money. Similarly Case Study D, with the feature of ownership of the water filtration plants by each of the private companies, was thought to be rich in opportunity to understand the impact of such contractual arrangements on sense of responsibility. In turn Case Study B, with the ownership of such plants retained by the government entity, offered a promising comparison with Case Study D. The conduct of O&M by the Case Study B joint venture promised opportunities for comparison with the alliance case studies, Case Study A and Case Study B.

All four candidate case study water systems are of a sufficiently large size to fall into the “*utilities with 100,000 connected properties*” grouping utilised by the National Water Commission in its annual *National Performance Report: Urban water utilities* (National Water Commission, 2011). This similarity in size removed variables based upon the size of the case study operations and allowed focus on the dependent variables arising out of the features of each case study.

4.2.2.3 Interviews

The administration of the informant interview was comprised of several stages. The first was the negotiation of appropriate informants. The second was the conduct of the interviews. The third was the completion of notes and reflections following the interviews. This section of the thesis sets out how those stages proceeded and how emerging issues were addressed.

The negotiation of appropriate informants was achieved through the four entity contact persons, each of whom was provided with a copy of the Interview Protocol (including the interview questions). Each contact person was from the government entity as a strategy was adopted of first approaching the government entity, gaining the support of that entity and asking that they arrange the agreement of the private companies to participate. This approach was taken as it was likely that the private entities would not commit without first knowing that the government entity had agreed to the research. The possibility that this strategy allowed the government entities to select private company informants who would favour the government entity was acknowledged and the researcher was alert to such choices. The data provided by private companies was tested during the later coding stage against data provided by counterpart government informants and data gathered from the literature and the archival study. There was no apparent bias in the data provided by the private company informants.

The interviews were conducted on site in the offices of the respective water systems or private companies. Each informant was provided with a copy of the Interview Protocol by email in advance of the interview and at the commencement of the interview, and the written consent form (see Appendix A) was completed by the interviewee. The interviews were recorded electronically and later transcribed by an independent, professional transcription service. Notes were taken by the interviewer during the interview. The researcher took handwritten notes of the interview including notes as to the physical environment, changes in the demeanour of the interviewee and issues to be followed up after the interview.

The researcher prepared for the interviews by revisiting the secondary data sources. This strategy was adopted to demonstrate respect for the informants and to be as prepared as was possible to recognise and follow unexpected themes and issues.

Across the four case studies 22 informants were interviewed. It was intended that there be a minimum of two informants from each of the entities which comprise each of the case study relationships so that data validation by way of comparison between intersecting roles could be achieved. In addition, issues identified in the interview of the first entity representative could then be pursued with the second informant from that entity. This was achieved in all cases except

Case Study B, where there were three informants from the joint venture and one informant from the government entity. However, the government entity has only one executive position allocated to water. Ultimately validation of data from the single informant was achieved by way of interviewing the counterpart informant from the joint venture and interrogation of the considerable body of data gathered from the archival study.

A routine was adopted of conducting a review of the interview data gathered and the overall proceedings of each interview at the end of each day. The practical effect of the four case study water systems being drawn from across Australia was that interviews for each case study were completed and reviewed typically over a two-day period and before the interviews for the next were commenced. This review stage examined the audio recording of the interview, the researcher's notes taken during the interview and a structured reflection upon the proceedings of the interview. This review allowed the researcher to reflect upon the nuances of the concepts and facts which the informants had put forward. A summary of the data from each informant was written up together with notes and observations regarding themes and factors, and impacting issues such as the physical environment in which the informant operated. Handwritten notes were annotated with the then existing themes and factors and further research tasks (usually regarding the particular water system) were identified.

This review routine improved the administration of the research methods. The researcher, in reviewing the recording of interviews from the first case study interviews, found that his strong personal identification with the engineering culture of the informants may have led to his assuming meaning, rather than confirming meaning. Thereafter the researcher was careful to explore rather than assume. In addition, the approach informants took to responding to the research questions informed the refinement of the tactics of conducting the interviews, generally leading to the collection of information staying more 'on point' with the Interview Protocol questions. The Interview Protocol questions remained unchanged for all interviews.

The informant interview study provided a substantial body of data which met the researcher's expectations as to informing the research regarding the behaviour of agents, stewards and principals.

4.2.2.4 *Analysis of data*

The analysis of the data commenced by applying the structure of themes and factors which underpinned the Interview Protocol to the coding of the data following the interviews.

A strategy of coding the data from all sources for the one case study before proceeding to the data from the next case study was adopted. This strategy allowed comparison and verification within the case study, and triggered further research tasks. Similarly the coding of data from successive case studies caused reflection upon the coding to date and led to the review of previous coding and the identification of nuances not previously detected.

The coding was carried out using the NVivo software which assists in organising and analysing data. The nodes were used for concepts or items, for example trust and incentives. Where there was an apparent theme between items, for example incentives and gain–share/pain–share, these nodes were allocated to a tree node. Where there was an apparent link between items, for example between incentives and sense of responsibility, relationship nodes were established. Because of the need for the research design to be open to all possibilities offered by the case study data the coding was approached on the basis of maximising the possible meanings and allocating each word, or section of text, to whichever node or multiple nodes their possible meaning suggested. As was expected, the subsequent iterative processes focused and reduced this initial ‘catch-all’ coding. This approach proved to be invaluable in detecting underlying themes in addition to the more obvious meaning attributable to the language. An example is the overt theme of coordination/collaboration/partnership which had for the private informants the less obvious dimension of being a measure of their success. Parent private companies were found to require this behaviour from individuals and their subsidiary organisations, formally surveying clients (contract principals) and seeing a direct link between their having a reputation for cooperation, coordination and collaboration and additional work elsewhere in the sector.

Following the coding of data from the last case study, and before writing-up the findings for the case studies (*Chapter 5: Analysis*), the researcher took the opportunity to end this case study-driven phase of the process and review the data from two quite different perspectives: one being the literature; and the other the

readiness of the node trees, the nodes and the reflective notes attached to some nodes to inform and support the write-up of the findings of the case studies and the cross-case analysis (*Chapter 6: Discussion*). The revisiting of the literature came from the obvious need to ensure that there was complete alignment between the format in which the data was assembled and the objectives of the research, particularly the research questions. In addition the exposure of the researcher to the facts and conceptualisations of the informants created the need for the researcher to draw out further meaning from the Agency Theory, Stewardship Theory and Privatisation literature. In respect of the readiness of the allocation to nodes and the choice of connection of nodes the researcher's concern was whether the whole and the parts portrayed in NVivo had arrived at the stage of being near complete or sufficient to support the write-up of the findings of the case studies. The coding was adjusted and the results tested by way of presentation to a peer colloquium and industry conference.

The analysis of the data presented by the refined assignments in NVivo proceeded using the framework of stewardship behaviour, sense of responsibility and actions to increase sense of responsibility with the data for each case study being explored and findings established before moving to the next case study and repeating the process. The outcome of that process is reported in *Chapter 5: Analysis*. After findings for each case study had been established a cross-case analysis of the data was carried out and conclusions reached as to the impact upon theory and the practical application of the findings. The outcome of that process is reported in *Chapter 6: Discussion*.

The process of examining the data on a case-by-case basis proved to be intensely iterative. The exploration of the informant interview data required both considerable reference back to the literature and existing archival data and also further archival research. Through that important step it was possible to not only bring precision to small issues such as correct titles and earlier organisational history, but also to develop deeper and alternate meanings from the data. This approach to the treatment of data was repeated in turn, with the remaining three case studies. Each case resulted in refining the coding and themes. For each case study the data collected from each informant was cross-checked by the researcher against that provided by other informants from that case study for the purposes of both validating

the immediate claims and uncovering nuances and subtleties in areas such as relationships, behaviours and culture.

The structure of the reporting of the findings was progressively adjusted to accommodate the unfolding themes and issues, and the reshaped framework was reapplied to the case studies that had previously been reviewed. This rigid application of the same reporting framework to each case study proved invaluable in drawing out further and embedded issues and revealed both factors common to more than one case study and distinctions between case studies. This framework, having been settled by such exhaustive consideration and readjustment, was then adopted for the reporting of the cross-case analysis.

The analysis of the findings from the individual case studies was then carried out utilising the cross-case method. The framework of themes and factors that had been refined in the development of the findings for individual case studies, together with the four case studies, formed the matrix that proved highly effective in comparing the findings and in developing the additional theoretical and practical knowledge which was the objective of this thesis. The discipline of this cross-case analysis, on a factor-by-factor basis, challenged perspectives taken by the researcher and the insights gained led to readjusting both the framework and findings established in *Chapter 5: Analysis*. This readjustment was less frequent than during the development of the findings for individual case studies but the insights gained through the comparison of cases required that findings which were earlier fixed were no longer viable, and the realigned data required fresh evaluation. The fresh approach to the data extended to a revisiting of the archival documents and literature and, to a limited extent, exploration of additional literature and archival documents. An example is the data challenging the somewhat out-dated Agency Theory assumption of the agent being risk-averse. This data was initially thought to be incidental; however, discussion of the findings as to principal's perception of attributes which supported the sense of responsibility of the agent or steward revealed that the principals had carried out formal risk assessments and selected private companies who had demonstrated the capability and capacity (the appetite) to accept those risks. Thus the cross-case comparison had revealed that what, from the perspective of the individual case study, appeared to be no more than an anachronism

was an attribute of the organisation as agent or steward which was highly important to being able to act with a sense of responsibility.

Acknowledging that any interpretation by a single researcher offers the possibility of bias, the assembled tentative conclusions were presented by the researcher to a meeting of the AAMCoG council for the purpose of gaining comment regarding rigor of process, relevance to the asset management industry and viability of interpretations. Council members assisted with insights into the perspectives of principals and contractors as to attributes that contributed to a sense of responsibility and suitability as stewards. In response to this advice the researcher revisited the interview transcripts and archival data which resulted in the development of an additional sense of responsibility perspective — one where the importance of that sense must also be seen through the lens of the principal.

4.3 ENSURING RESEARCH INTEGRITY AND DATA QUALITY

Having explained the strategies for collecting and analysing the case study data and the experience of administering the research design, this section now justifies that research strategy and its administration, in particular the steps taken to ensure the integrity of the data collected. Finally, this section lays out the limitations inherent in the research approach and methods.

4.3.1 Justification for the design, methodology and administration

The three aspects of Stewardship Theory being pursued in this thesis are: the nature of stewardship behaviour at the inter-organisation level, the importance of sense of responsibility to stewardship being achieved, and the actions which the principal might take to increase that sense of responsibility. Keeping those three targets in clear sight, this thesis then assembled the data within a framework built upon those areas and applied that framework rigorously to all data, whether collected from the case study methods or the literature. The research did not depart from that framework resulting in the conclusions as to the development of the literature and the practical application of the conclusions retaining full alignment with the research questions and the purpose of this thesis.

To draw out the data for this thesis a multi-case method was utilised and multiple sources of data for each case study were accessed. These many sources revealed a matrix of themes, factors and issues which provided significant insights

into the behaviours of organisations as stewards, the importance of sense of responsibility on the part of the agent or steward to the achievement of stewardship behaviour and the actions which increase that sense of responsibility. Drawing data from the literature, the archival study and the informant interview study provided a deep understanding of the actual experience within the case study and the comparison tool provided by the cross-case method was found to be a powerful tool for understanding the importance of a factor either in the context of one case or across multiple cases. The most-different case approach provided a broad range of forms of privatisation, which presented contrasting evidence which engendered further rigor into the evaluation of the findings. This multi-case comparison was highly appropriate to the task of supporting the development of aspects of Agency Theory and Stewardship Theory. The multi-case method with its relentless between-case comparison of the same issue or concept allowed the researcher to provide considerable rigor to this research resulting in precision of findings and conclusions that have a high probability of validity (Miles & Huberman, 1994; Stewart, 2012; Yin, 1994).

4.3.2 Data quality and integrity

To maximise the quality of the data and to achieve the highest possible level of reliability in interpretation of that data a number of strategies were applied in the areas of: choice of methods; close, careful design; and application of the processes. These have been described in the preceding sections of this chapter.

The utilisation of multiple sources of data, cross-case comparison and case study organisations that are subject to a high level of scrutiny by independent regulators and requirements as to high levels of transparency to the public set the foundation for the strong comparison of data.

The processes involving the collection of data were strengthened by audio recording and the independent transcription of interviews. The findings and later the conclusions from the cross-case analysis were put to the scrutiny of industry bodies, namely AAMCoG, CIEAM and the World Congress on Engineering Asset Management 2012.

The processes for the analysis of data, with the initial examination of data and reporting of findings on a case-by-case basis against a common framework of factors

followed by a detailed cross-case comparison and analysis, mandated that the researcher explore all data in considerable depth. However, despite these strategies to ensure that high quality data were collected and that there be the highest reliability in interpretation of the data it is inevitable that the research methods adopted have inherent limitations. These in turn affect the results of this research.

4.3.3 Limitations of the methodology

The key areas of limitation are the relative reliability of the research methods chosen and the generalisability of findings attributable to the form of privatisation, having regard to there being only one example of a form of privatisation in the case studies chosen.

The research methods chosen have inherent limitations as to reliability, for example issues involving bias in data collection and interpretation. How controls for those limitations were addressed in the research methodology was explained in the preceding sections. The major limitation which remains is the reliance upon a single (unaided) researcher for the conduct of the interviews and the treatment of data and analysis of findings. The potential for bias in the conduct of the interviews and interpretation of data have been addressed by controls but the limitation remains. Indeed, Stewart (2012) observes that “...unless the study is very tightly bounded, it may be physically impossible for one unaided researcher adequately to cover the data-gathering” (p. 80). However, Stewart (2012) acknowledged that in the circumstances of more than one researcher the risk of moderation problems ensue making knowing how the research team handled this issue helpful in assessing the reliability of the conclusions. Whilst the research design in this thesis was constructed in as tight a fashion as was possible given the exploratory nature of the research and as the number of interviews (22) did not present a resourcing issue to the single researcher it is acknowledged that the findings and conclusions of this research should not be taken to have greater reliability than should be given to the work of a single researcher. The prudent user of this research should build on the findings and conclusions of this research with their own work.

The reliance upon four case study water services and the application of the ‘most different’ approach to the selection of case studies from within the Australian urban water services industry provided a rich range of typical forms of privatisation, but in doing so limited the capacity for generalisability of findings based on forms of

privatisation. In that way the original aspiration for this research, for learnings which could be applied to all critical infrastructures, cannot be met. However, the performance of an individual form of privatisation, for example an alliance, in relation to stewardship is but one aspect of the research and the finding of stewardship by a particular form of privatisation at least points theorists and practitioners in the direction of a possible causal link. Notwithstanding this limitation, the fact that all four case studies had many factors in common was found to allow the outcomes of the research to significantly contribute to the extension of Agency Theory and Stewardship Theory and provide learnings which are highly applicable to the operation of urban water systems and be generalisable to other critical infrastructures.

4.4 TOWARD THE PRIVATISATION CASE STUDIES AND FINDINGS

This chapter has explained the overall research methodology and processes adopted for this thesis. The archival document study and the informant interview study collected qualitative data in respect of four case study Australian urban water systems. The application of the methodology was shown to allow a very detailed analysis of the findings with the intent of unpacking the variables impacting on stewardship, sense of responsibility and actions to increase the sense of responsibility.

The next chapter, *Chapter 5: Analysis*, describes the four case study organisational relationships and reports on the findings obtained by the application of the research methodology. Then following this in *Chapter 6: Discussion* the findings for all case studies are compared and contrasted and conclusions reached as to the implications for theory and practical application of the findings.

Chapter 5: Analysis

5.1 INTRODUCTION

This chapter presents the four case studies drawn from across Australia. The participation of organisations and individual informants and the approval of the QUT Ethics Clearance were conditional upon neither the organisations nor the individuals being identified. For that reason the case study relationships are denoted by way of a letter of the alphabet, for example D being the fourth case study. The informants are each denoted by way of an alphanumeric identifier, such as informant D3, which reveals nothing more than the person was the third person from the case study which is reported fourth in this thesis.

5.2 CASE STUDY A

5.2.1 Introduction

The Case Study A contractual relationship was established by the government entity (referred to in this thesis as GovCom) responsible for the provision of water and waste water services to a major part of an Australian capital city. At that time GovCom extended the existing practice of contracting out O&M work by going to the market for private participants to join it in an alliance to carry out operations, maintenance and capital works. A consortium comprised of two private companies was successful and entered into an alliance contract (The Agreement) with GovCom for a term of about 10 years. ‘The Alliance’ is the focus of this case study.

The following sections first describe the key features of The Alliance to establish a foundation for the subsequent development of the findings from this case study. Second, the findings are assembled utilising a framework based on the areas of this research; that is, stewardship behaviour, sense of responsibility and actions to increase sense of responsibility. Third, the key findings are probed to understand the significance.

5.2.2 Key features of The Alliance

The Alliance exists to carry out the operation, maintenance and an increasing proportion of the capital works of the water service. This section firstly describes

that service to provide a context for the findings. Secondly, the legal form of The Alliance and the objectives of GovCom when establishing The Alliance are described. Thirdly, the environment of regulation and reporting within which The Alliance operates is examined. Fourthly, the payment arrangements, comprising Key Performance Indicators (KPIs), margins linked to performance and gain–share/pain–share payments, are explained.

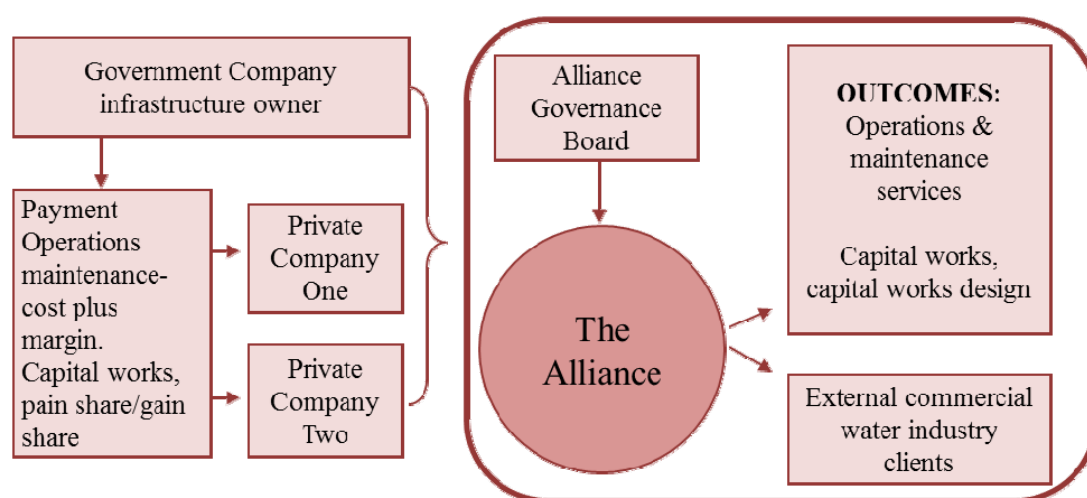
5.2.2.1 *The water service*

GovCom purchases drinking water from a separate government supplier and through the water system serves approximately 1.5m people and industrial customers (GovCom Corp. Plan 2010–13). In 2011 GovCom’s income was about \$600m and The Alliance charged GovCom \$100m for O&M, and \$50m for capital works.

5.2.2.2 *Legal form and objectives*

The legal form was described by the Auditor-General as an ‘alliance’ describing alliances as a procurement strategy whereby an owner-participant and commercial participant/s establish a virtual organisation to undertake works (Auditor-General, 2010). No new legal entity was created, the infrastructure assets remain owned by GovCom, each participant engages employees or contractors or purchases materials in their own right, and each retains its responsibilities to its owner. GovCom is a Corporations Law company for which the State Treasurer is the sole shareholder (GovCom Corp. Plan 2010-13). One private participant is one of the largest contracting groups in the world and the other a large engineering, manufacturing and services company based in Europe. The Alliance’s participants, governance and service outcomes are illustrated in Figure 5.1.

Figure 5.1 The Alliance



Decision-making is carried out by an alliance governance board (AGB) which is comprised of four members: two representing GovCom and one each from Private Company One and Private Company Two. The Agreement specifies that one of the GovCom members performs the role of alliance General Manager on a full-time basis and the other three AGB members have a time involvement limited to the monthly meeting process and other less frequent processes, typically planning. The other GovCom member is the GovCom executive responsible for infrastructure. Both positions are members of the GovCom executive which is subordinate to the GovCom Board of Directors. In addition the Agreement confers on GovCom the right to appoint the Chief Finance Officer of The Alliance so that the interests of GovCom are protected.

The Agreement requires that decisions must be unanimous and made on the basis of the best interests of The Alliance rather than in the interests of any of the participant entities. This feature of The Agreement is explored in greater detail in *Section 5.2.3.1 Stewardship of infrastructure* and *Section 5.2.3.3 Actions to increase sense of responsibility*, as all informants put forward the requirement for decisions to be unanimous as a strong contributor to both stewardship and sense of responsibility.

The Alliance was formed to achieve the following objectives:

- reduce costs, maintain service levels and optimise performance in terms of cost, reliability and availability over the lifecycle of assets;
- achieve profitable growth of unregulated income by undertaking external works;
- encourage the participants to bring technologies and develop technologies in the alliance; and
- attract, retain and develop skilled GovCom staff (Auditor-General, 2010).

The satisfaction of these objectives is assessed in the part of *Section 5.2.3.1 Stewardship of infrastructure* which evaluates whether stewardship of the system has been achieved.

5.2.2.3 Regulation and reporting

The regulatory and reporting environment which applies to GovCom and The Alliance is now outlined with the objective of understanding the control, transparency and community protections within which this privatisation operates. Firstly, the regulation which applies to operators of drinking water and sewerage systems is set out. Secondly, the regulation of the charges for services and the finances of GovCom are described. Thirdly, the reporting as a government company and provider of water services is described.

As a water services provider GovCom must meet requirements of state-level water sector legislation and hold a licence covering both water and sewerage. The state environment protection authority issues licences for sewerage treatment plants and oversees the recycling programs (GovCom Corp. Plan 2010-13). Drinking and recycled water quality and other public health issues are overseen by the state health department (GovCom Corp. Plan 2010-13) which publishes public drinking water quality reports (Annual Report on Drinking Water Quality 2009-10) which include issues with water services including GovCom. Customer dispute resolution is achieved through an ombudsman (State Ombudsman Annual Report, 2011).

The charges which GovCom must apply to its customers are determined by the state regulator. The regulator has specified measures of the quality of service provided by urban water services to customers. Financial management of GovCom

is controlled by the State Treasurer as sole shareholder who approves significant financial management matters (such as capital expenditure programs) for all water entities.

Public reporting is comprised of items required of a government entity and those required of a water entity plus other reporting which GovCom makes voluntarily. A business plan is formed annually for approval by the Treasurer. In turn, an annual report is provided audited by the Auditor-General and tabled in the parliament. Half-yearly and quarterly reports as to financial and non-financial performance (GovCom AR 2011) are made to the Treasurer as shareholder. A Water Quality Report is made annually in line with safe drinking water legislation. GovCom participates in the National Water Commission annual comparison between similar urban water services (Department of Infrastructure and Transport, 2011). GovCom also participates in an ongoing survey by Customer Service Benchmarking Australia Pty Ltd across industries which have customer call centres. GovCom was found to be one of the best performers in four out of five categories (GovCom Corp. Plan 2010-13).

A key aspect of this regime is the significant accessibility of information to the public. These various reports, and those of the independent regulators listed earlier, are all available on the internet sites of each organisation. This reporting results in a high level of transparency as to the issues and outcomes of the activities of GovCom and The Alliance.

5.2.2.4 Payment arrangements

Core to the alliance financial arrangements is the underlying premise that all three participants continue to enter into contracts, purchase materials and engage employees in their respective names. The Agreement commits the three participants to ensuring the highest standards of probity and transparency, which in practice requires the three participants to maintain complete accounting records including details of all direct costs incurred and all relevant work documentation (Auditor-General, 2010).

For O&M work the private participants are reimbursed for direct costs and paid a margin applied to those direct costs that is adjusted every four months (A-G, 2010) based on the performance of the alliance against 16 KPIs with the target for

each KPI being adjusted annually by negotiation. The O&M margin is paid to cover corporate costs and to provide profit. The initial base margin was a competitive criterion at the time of tender and it is this that is adjusted every four months to be applied during the following four months. The margin applied for the period November 2007 to February 2008 was 1.1% over the initial base margin (Auditor-General, 2010) resulting in a significant ‘gain share’ for the private participants.

For capital works The Agreement guarantees that The Alliance performs some of the capital works (initially those which were less than \$10m but that threshold has since been increased). The Alliance has the option of engaging and project managing one or more contractors for a fee equivalent to the base margin, or using The Alliance staff and resources to carry out the project to a target cost including the margin agreed in advance with GovCom. If the actual cost is less, then the ‘gain’ is shared equally between GovCom and the private participants; that is, 50% to GovCom and 50% shared between the two private participants. If completed for more, then the ‘pain’ is also shared equally but for the private participants is capped at the amount of the margin (Auditor-General, 2010).

These payment and incentive arrangements are dependent upon the high level of transparency of the costs of all parties and the sharing of all documentation relevant to The Alliance’s work. This extensive and complete sharing of information within The Alliance meets the Agency Theory conceptualisation of information symmetry; that is, no party has an advantage over another by way of having knowledge or data that offers the possibility of being used to act against the interests of the other party.

5.2.3 The findings

This section first explores whether there was stewardship of the infrastructure and then explores the nature of any stewardship behaviour. Secondly, whether there was sense of responsibility on the part of The Alliance to GovCom is explored together with an analysis of how important sense of responsibility was to the agent or steward acting in the interests of the principal. Thirdly, the actions taken to increase sense of responsibility are unpacked.

5.2.3.1 *Stewardship of infrastructure*

Section 2.2.3 Stewardship of public values concluded that the achievement of the desired stewardship outcome for critical infrastructures can be measured using public values chosen from the framework assembled by Van Gestel et al. (2008). Utilising that framework the data showed that GovCom was driven by two themes of values: the efficient use of public resources and the quality of services provided to customers. The data are analysed to understand the level of performance of the steward.

5.2.3.1.1 *Efficient use of public resources*

The efficiency of use of public resources is assessed in two ways: firstly by comparing against the performance of the system before The Alliance was introduced and secondly against similar water systems. Comparison with the pre-alliance arrangements was made by the Auditor-General (Auditor-General, 2010) who estimated O&M work cost 6.4% less than if the schedule of rates arrangements which predated The Alliance had continued. The Auditor-General estimated that for capital works the costs were 6.5% less, mainly as the result of eliminating works variations (Auditor-General, 2010). The Auditor-General concluded that the savings from The Alliance represented “...a good commercial outcome for its customers and shareholders...” (Auditor-General, 2010).

The efficiencies were found to have been achieved by making decisions with a longer-term view and by changing the duties of staff. Private Company Two informant A4 said that involving the people who will operate or maintain a particular plant in the construction of that plant allowed informed decisions to be made about the design of operations and the maintenance for the next 20 or 30 years. Private Company Two informant A4 said “...*how we deliver an asset is not cutting out costs or cutting corners...like you might do in a lump sum or schedule of rates contract.*” Informant A4 advised that The Alliance had made long-term productivity improvements such as the same call-out team working on both ‘dirty’ and ‘clean’ water emergencies by gaining union agreement.

A comparison against other systems in the annual *National Report: Urban water utilities* showed that GovCom’s combined operating costs for water and sewage per property were the lowest of the three adjacent utilities for the fifth year in a row (National Water Commission, 2011). As this high level of efficiency was

achieved whilst servicing additional areas and additional customers, and responding to ‘drought’ conditions, it is concluded that efficient use of public resources has been achieved.

5.2.3.1.2 *Quality of services*

The quality of services provided by all case study water systems are measured by using the *National Performance Report: Urban water utilities*. The report adopts the number of complaints as an indicator of the level of customer service and satisfaction. GovCom reported the lowest levels of complaints for the three adjacent utilities reporting a 2009-10 result of fewer than five complaints for every 1,000 properties, such a standard being achieved by only one other water entity. Of the eight utilities compared, GovCom was the second lowest in 2010. The average duration of an unplanned interruption to the customer’s water supply is considered to be a partial indicator of customer service, and of how effectively the network is being operated and maintained. GovCom has for the three reporting years achieved the lowest levels of unplanned interruptions for the three adjacent utilities, and in 2009–10, 2008–09 and 2007–08 it was the lowest of all nine utilities. The percentage of calls answered by an operator within 30 seconds is held to indicate the efficiency of the customer service centre. GovCom achieved the highest percentage of calls answered within 30 seconds for the adjacent utilities, with the 2009–10, 2008–09 and 2007–08 results equalling the highest performing utility in Australia.

To understand the quality of services provided by The Alliance the archival and informant studies sought out any significant adverse mention as to service quality. None was found in the archival study and all five informants asserted that the quality of the services provided was high, proudly citing a water mains replacement project as an example of an unprecedented, high standard of customer satisfaction. GovCom informant A1 said “...*at the end of that we got quite a few letters of thanks from affected stakeholders and the innovations that were brought in through Private Company Two...were quite outstanding.*”

Brought together, the evidence of the Auditor-General, the National Water Commission and the archival and informant studies is that the public values of efficient use of public resources and quality of service have been well satisfied by The Alliance. Before proceeding to form a conclusion as to stewardship based on that evidence, evidence as to any other event or conduct on the part of The Alliance

or GovCom which would suggest that there had not been stewardship was sought out by way of a review of relevant media. No adverse mention was found and it was concluded that The Alliance has achieved strong stewardship of the water system.

5.2.3.1.3 *Stewardship behaviour*

This section seeks to identify data which will clarify Davis et al.'s (1997, p. 24) assertion that the steward "...will not depart from the interests of his or her organisation." The following paragraphs assemble the data as to the nature of stewardship behaviour in this case study. In *Section 2.3.2.1 Concept of stewardship behaviour* contractual compliance featured as an outcome in one variation of the Agency Theory model and as an essential feature of the Stewardship Theory model. The following distinctions and 'common ground' between the theories were identified:

- no contractual compliance (Agency Theory);
- contractual compliance (Agency Theory and Stewardship Theory); and
- acting in the interests of the principal (Stewardship Theory).

In all studies (literature, archival and informant) there was no instance of there not being contractual compliance by The Alliance.

The question of whether The Alliance had acted in the interests of GovCom was pursued initially with the report of the Auditor-General (Auditor-General, 2010), followed by GovCom's annual reports. A consistently strong theme of the two private companies acting in the interests of GovCom was found. The interviews with the GovCom informants confirmed that strong theme of the companies acting in GovCom's interest. The informants and the archival study, in particular a formal search of the media, did not reveal any evidence of The Alliance or individual private participants acting against the interests of GovCom. However this evidence of *acting in the interests* positioned that attribute as a requirement of the contract and, as such, within contractual compliance.

This thesis then explored the extent of, or limit to, this acting in the interests of GovCom. GovCom informants A1 and A2 separately presented the view that the private participants do put the interests of The Alliance and GovCom over the interests of their own companies. Informant A1 said the reasons for this were the

long-term relationship extending 10 years before The Alliance started and also the contract provision for the adjustment of KPIs and gain–share/pain–share arrangements which are very clear as to what is expected of alliance participants. GovCom informant A2 later built on this thread, explaining that rather than expecting that The Alliance participants take the initiative and take some extraordinary action GovCom utilises the mechanisms of The Agreement to focus the private participants on the areas GovCom wants addressed. GovCom informants A1 and A2 separately explained that GovCom acknowledges that the private participants are commercial, that the participants won't exist if they don't make a profit and that commercial needs must be respected.

An alternate conceptualisation of the behaviour in the context of an alliance was put by Private Company Two informant A4 who said:

...It works both ways. No decision should be to the benefit of one or two of the parties and the other one is losing big time, because that would be anti-alliance behaviour. But also it would not be meeting (our) fiduciary duty, so you are doing it for the benefit of the alliance and the alliance has to take into account the benefit of all the parties. It can't just be good for one, and that is why it is unanimous decision-making, it's not majority, it is unanimous decision-making...[the Alliance Governance Board members] have a fiduciary duty to uphold the interests of those other companies, and at times over and above their own company.

In this way the formal Alliance Agreement requires that decisions be both in the interests of The Alliance (and therefore GovCom) and not to the detriment of a party (e.g. a private participant). It appears that there is a tacit assumption within The Alliance that if a member of The Alliance believes that a particular action is necessary then the issue must be brought to the AGB and a decision made collectively, removing the option for a private participant to independently embark upon an extraordinary action, notwithstanding that action being in the interests of the principal.

In summary, The Alliance was found to have achieved stewardship of the system and that the behaviour of the private companies was that of consistently acting in the interests of the principal but not characterised by any extraordinary action or initiative. It was further found that GovCom did not expect any such extraordinary action and that such expectation was considered unrealistic as the

private companies had the commercial need to make a profit. That perspective was consistent with the terms of The Agreement which required that alliance participants only act in the interests of The Alliance, and in accordance with a unanimous decision. Thus the finding then is that the stewardship of the water system was characterised by the behaviour of a steward—that is, *actively act in the interests of the principal* (p. 18) — but that this behaviour was that required by the contract. However, there was no evidence of the Stewardship Theory behaviour (Davis et al., 1997, p. 24) of the private company placing higher value on the interests of the principal than its own interests. Collectively, these findings suggest that the private participants are not required to, and are not, doing more than complying with the contract. The findings thus provide evidence of the operation of an Agency Theory model where the goals of the parties are aligned, albeit that the behaviour of the private participants is like that of stewardship.

5.2.3.2 Sense of responsibility

Earlier in this thesis, in *Section 2.3.2 Stewardship Theory*, it was reasoned that there was a strong possibility that sense of responsibility to the principal on the part of the steward was highly important — possibly essential — to there being stewardship behaviour. Indeed that examination of the literature suggested that there is a possibility that sense of responsibility is the attribute which distinguishes a steward from an Agency Theory agent.

Sense of responsibility is not a concept or language which is routinely used within GovCom or The Alliance, yet this research found that there was a consistently strong sense of responsibility demonstrated by The Alliance participants. The performance of The Alliance is measured by a significant number of the performance standards and objectives required of GovCom by the regulatory arrangements outlined in *Section 5.2.2.3 Regulation and reporting*. The Alliance participant organisations and individual informants each evidenced an unequivocal sense of responsibility to achieving GovCom’s goals and objectives. Indeed the two Private Company Two informants put forward the perspective that they (Private Company Two) should not expect to stay as a partner if the company is not innovating and is not “...*delivering the outcomes that are expected...*”. The informants from both GovCom and the private participants all separately referred to a project to replace the water mains in a very busy street as a demonstration of sense of responsibility to both

GovCom and the community. This project involved the renewal during 2009 and 2010 of several kilometres of water main which runs under the main street in a high profile commercial, restaurant and retail precinct. The Alliance introduced significant civil works' innovation and actively engaged with its customers throughout the project to minimise disruption to local businesses and residents (GovCom AR 2010). GovCom informant A1 advised that The Alliance performed well, with GovCom receiving *"...quite a few letters of thanks from affected stakeholders."* The annual reports of GovCom confirm the difficulty and success of this project, in 2009–10 describing the upcoming challenges of minimising disruption to businesses and residents and in the 2010–11 report describing the success of the work by The Alliance.

However, GovCom informant A1 also conceptualised the sense of responsibility demonstrated in this water mains project as being directed or motivated by the KPIs and financial rewards for the participants. Informant A1 commented that the project was carried out during a period for which the KPIs which trigger gain–share payments had been adjusted to provide a greater emphasis upon community engagement. Informant A1 considered that *"...basically it is a commercial arrangement, if there are areas that we as the client want the commercial partners to focus on then [we] put it into the commercial framework...and they will focus on it."* Informant A1 observed that the sense of responsibility on the part of The Alliance was an evolution resulting in there being *"...no huge gap...it's not as though we've suddenly had a new partner."* In summary, the five informants presented a consistent, strong belief that the alliance participants display a strong sense of responsibility to GovCom. There was clear evidence that GovCom had taken action to direct or create that sense of responsibility by establishing and utilising the gain–share incentive payment arrangements. The operation of such arrangements is considered in greater detail in the next section of this chapter. However, such incentive payments, and the terms under which they are made in this case study, fully align with the Agency Theory prescription that extrinsic rewards will motivate the agent to achieve the goals of the principal (Jensen & Meckling, 1976).

This finding that The Alliance participants had demonstrated sense of responsibility was tested by returning to the archival documents and interview data to

search for contrary data. The Auditor-General's report (Auditor-General, 2010), the search of the press and the data gathered in response to the Interview Protocol all failed to find any disconfirming evidence. In particular the Interview Protocol document specifically put questions as to whether The Alliance members had ever acted against the interests of the principal and the position taken by the private participants in respect of any subsequent problems with the quality of their work. The data obtained revealed that at no time had the two private companies not shown a sense of responsibility to GovCom but that some individual employees had not evidenced such sense of responsibility. Private Company One informant A5 and GovCom informant A1 both gave examples of where individual new employees of Private Company One working on capital projects had acted as if they were in a conventional contractual arrangement and pursued the interests of their employer to the detriment of The Alliance and GovCom.

The issue then is how important is sense of responsibility to stewardship behaviour on the part of the private participants? The earlier unpacking of the Stewardship Theory literature found that there was a strong possibility that *sense of responsibility to the principal* was highly important, possibly essential, to there being stewardship behaviour. Accordingly the findings from all case studies are evaluated to understand the importance of sense of responsibility, whether it is highly important or essential.

Returning then to The Alliance, an unpacking of the findings suggests that the importance of sense of responsibility can be seen from two perspectives: one, the causal link between sense of responsibility and stewardship behaviour; and the other the requirement of the principal as to whether sense of responsibility is essential.

The data attributed efficiencies and success with service quality to the actions of The Alliance participants and showed a strong causal link between those efficiencies and service quality success and the stewardship-like behaviour of the alliance participants. As has been outlined earlier in this sub-section, all informants were unequivocal in their belief that there was a strong sense of responsibility to GovCom's goals and objectives. The two Private Company Two informants put the perspective of intense focus on the goals and objectives of GovCom. Private Company Two informant A3 said "*If we don't perform and we don't keep improving and aren't innovating and aren't delivering the outcomes that are expected, then we*

shouldn't expect to stay there and be a partner." Private Company One informant A5 set out his company's belief system as "...*being honest, acting with integrity and making sure that everything you do is genuinely for the best for The Alliance...*". It would seem then that this very strong sense of responsibility has had a strong causal link to there being stewardship-like behaviour and in turn stewardship of the system.

To test this tentative conclusion it was hypothesised that this stewardship could have been achieved without there being a sense of responsibility on the part of the private participants. This hypothetical situation would involve the participants not acting to give GovCom the full benefit of their expertise and not protecting them from the possibility of adverse outcomes in matters such as the water mains replacement project, but still satisfying the public values. That would be possible but not probable given the customer service nature of the water system business. In summary, looking through the causal-link lens it is concluded that sense of responsibility on the part of the private participants was highly important to stewardship-like behaviour.

Focusing upon the data with the lens of the principal's contractual requirements, the data from the five informants and the report of the Auditor-General (2010) reveals that GovCom set goals and objectives for The Alliance which amount to stewardship of the water system. Similarly, in creating The Alliance governance arrangements with the emphasis upon 'best for alliance' and 'for the benefit of all parties', and unanimous decisions and the incentives based on KPI achievement, the principal would appear to be establishing the requirement that The Alliance participants act with a sense of responsibility to GovCom. Indeed the informants were all of the view that those governance requirements and incentives had a strong causal link to the sense of responsibility evidenced by the private participants. It is concluded that for the principal sense of responsibility was essential. No disconfirming evidence was found — that is, evidence that GovCom would accept that one or both of the private participant companies could act without a sense of responsibility. This is to be expected as it is highly unlikely that a principal in a contractual relationship to provide critical services would allow the agent or steward to have any perception whatsoever that it was acceptable that their behaviour could be less than acting with a sense of responsibility. Accordingly, testing this finding would require a methodological design different from this research, one which

focuses upon the expectations of principals, possibly requiring a much larger population of principals.

In summary, it is concluded that looking through the causal link lens sense of responsibility on the part of the private participants was highly important to achieve stewardship of the water system and that looking through the lens of GovCom (the principal) sense of responsibility was essential.

5.2.3.3 Actions to increase sense of responsibility

The preceding section of this thesis assembled the data in respect of evidence of sense of responsibility and the link to stewardship-like behaviour. This section brings together the data in respect of the actions which the parties took to increase sense of responsibility on the part of the steward. The data formed into four themes which are explored in the following subsections:

- ensuring suitable participants;
- the culture;
- clear contractual outcomes; and
- incentives to private participants.

5.2.3.3.1 Ensuring suitable participants

The importance of government choosing suitable private participants with which to contract was a theme common to all informants. The informant study also revealed the suitability of the government entity and its employees to enter into an alliance to be important. The informants specified experience in ongoing O&M contracts, employees being suitable to work within the alliance relationship, knowledge of what mattered to the partner, and reputation. These attributes are unpacked in the following paragraphs.

Private participants having experience in an alliance delivering ongoing O&M was highlighted by the GovCom informants A1 and A2 as making a significant contribution to the sense of responsibility to GovCom. Private Company Two informants A3 and A4 confirmed that both private company participants brought substantial knowledge of alliances, with A4 observing that the private companies had created and still jointly own a private company which delivers performance-based contracts for O&M in a wide range of industries across Australia.

The importance of the employees of private and government participants in alliances being suitable for alliances was outlined by Private Company One informant A5, who vehemently put the view that the “...*biggest single driver in a successful alliance is having people on both sides who understand ...what alliances do and believe in it as a business model concept...*”. He conceptualised this belief in the alliance business model as ‘commitment’, explaining that the commitment to the alliance objectives achieves stewardship of the system infrastructure. Stewardship theorist Hernandez (2012) has utilised the term ‘commitment’ in the same context as sense of responsibility. Private Company One informant A5 explained his point with the example of “...*one of the best managers we have in our organisation...I took him out of the alliance, because he ...just didn’t understand that there were compromises to be made here...*”. Similarly the three private participant informants revealed that the GovCom Board, executive and employees had generally proven suitable for the alliance model. Private Company Two informant A4 advised that there had never been a case of GovCom employees displaying any ‘trouble’ with Private Company Two employees being there. In contradiction, Private Company One informant A5 recounted his experience of some GovCom employees not being suitable for the alliance saying:

...the biggest level of tension...was when people came into the alliance from GovCom side who hadn’t been a party to the alliance...either at a managerial level or at the Alliance Leadership Team (ALT) level and I used to notice how much we had progressed from the old master/slave mentality. A particular individual who was put onto the ALT ...it was like going back five years, because it was about well what are we going to get for this, what have you done for this, rather than having an understanding that we had built up through trust and confidence that what we were doing for each other was beneficial for each other.

Knowledge of what mattered to the partner emerged as a distinct theme both from direct questioning of the informants and then from the indirect references and language of the private participant informants. The private informants demonstrated a clear understanding of what mattered to GovCom, both those issues generated within GovCom and those from the larger government as owner and public as stakeholder environment. At the GovCom level, Private Company Two informant A4 gave the example of the need for an independent third party assessment of alliance estimates of cost for capital project work, commenting that “*It is in the*

interests of everybody in the Alliance that GovCom can demonstrate that value for money has been achieved.” Private Company Two informant A3 gave the examples of GovCom recently putting a small job out to market and the cost to The Alliance of external third party reviews observing that “ ... it really gets down to making sure that there is ample evidence ... that the right things are being done ...”. Private Company Two informant A4 said that “... it is incumbent on GovCom that it is answerable to government ...” and that that accountability “... would incorporate how can you demonstrate value for money?” Informant A4 observed that if GovCom did not do this “it would cause problems for everybody [in the alliance].” At the higher level of ‘government as owner’ Private Company Two informant A4 described the issue as the need for private companies to understand the interest and involvement of governments and government departments and agencies saying that understanding “... is something that is a requirement of doing business in a government environment.” A similar level of understanding of what matters to the private participants was shown by GovCom informant A1 who said “...at the end of the day they are there as a commercial entity and GovCom has to respect that as well.”

The reputation of private participants emerged as being a key element of their suitability and being intertwined with, if not inseparable from, the sense of responsibility of the private participants. Private Company Two informants A3 and A4 said that for Private Company Two their Company’s reputation is paramount as the work in The Alliance is crucial to their obtaining future additional contracts with the client and other customers. Informant A3 said that this focus leads to Private Company Two continually taking decisions which build that reputation by demonstrating a strong sense of responsibility to GovCom and the community. Private Company Two informant A4 unpacked his perspective as to what constitutes reputation saying:

...it’s not just the gain–share/pain–share but rather for a business like Private Company Two there are all the other elements that flow from that. Having good customer references which The Alliance is, it clearly being number one in this country and in the top 10% in the world in terms of independent benchmarking on performance, that’s a great thing for us to develop and have contributed to.

GovCom's reputation as both a government organisation and successful water system emerged as an attraction and incentive for the private participants, as the association with GovCom was a declaration of the quality of the service provided by the private company which assists them in gaining work from other organisations. This further work could be in the company's own name or services to other water entities through, and in the name of, The Alliance. This access by the private participants to the GovCom reputation was conceptualised by the Auditor-General as part of the intellectual property that the parties brought to The Alliance. The Auditor-General observed that GovCom brought its reputation as an established public sector water and sewerage entity to The Alliance and acknowledged the argument by The Alliance that this reputation is a major asset when selling services to the conservative, risk-averse water sector (Auditor-General, 2010).

5.2.3.3.2 *The culture*

The informants advised that at the time of establishing The Alliance GovCom and the two private companies gave particular attention to matters which would contribute to the culture they wanted to establish within The Alliance. Several of those matters went specifically to the issue of bringing together employees from three organisations and ensuring a sense of responsibility within the new organisation, The Alliance. The key actions which were taken to craft The Alliance's culture were:

- the Agreement principles;
- brand alignment; and
- people initiatives.

5.2.3.3.2.1 *Alliance agreement principles*

The principles established in The Agreement were held by informants to be crucial to the achievement of sense of responsibility. Private Company One informant A5 described the principles being “...as corny as they sound...being honest, acting with integrity and making sure that everything you do is genuinely for the best of [The Alliance]...”. The Agreement was not made available but the Auditor-General's report (Auditor-General, 2010) and the data from the informants showed three principles to be critical to sense of responsibility on the part of The Alliance: transparency of costs, payments and decision-making; decisions being

unanimous; and the requirement that decisions must be in the best interests of The Alliance.

The Agreement commits all parties to ensuring the highest standards of probity, full transparency and open discussion of all financial and operational matters and documents, including open-book accounting (Auditor-General, 2010). The three private informants were comfortable with this approach, with Private Company Two informant A3 saying that “... *every cost, every cent that [Private Company Two] has in delivering the services is known by [GovCom].*” These requirements were mentioned by the informants in language which was positive and without qualification. It would appear that for all informants the environment and relationship created by these probity and transparency requirements engenders a sense of responsibility to all participants, including GovCom as principal.

The requirement that all decisions of The Alliance AGB be unanimous was seen by all informants as a strong contributor to both stewardship and sense of responsibility on the part of the participants. The contribution to stewardship was explored earlier. The contribution to sense of responsibility may possibly come from the commitment achieved by the contractual provision that no one party is able to impose their will on the other parties. An example was the attitude of the three private participant informants when separately discussing the annual adjustment to the KPI targets and related margin payments. Each of the three were positive and accepting of the annual adjustment, emphasising that this annual adjustment decision was an AGB decision and therefore unanimous and was made on the basis of it being best for The Alliance.

The requirement that the decisions must be *best for* The Alliance or for the benefit of all parties was explained by Private Company Two informant A4 who said that each of the four AGB members “... *have a fiduciary duty to uphold the interests of the other companies, and at times over and above their own company...your fiduciary duty is to look after the interests of the other parties as well.*” Further evidence that The Agreement rejects the concept of each participant acting in their own interests and emphasises the interests of The Alliance was found in the report of the Auditor-General which recorded that The Agreement commits all parties to avoiding contract disputation and cost variations by adopting a ‘no-blame, no-disputes’ culture (Auditor-General, 2010). The outcome of this focus on the

interests of The Alliance or the interests of the other participants is that any capacity for self-interest is redirected to a sense of responsibility to The Alliance or the other participants — one of which is the principal, GovCom.

5.2.3.3.2.2 *Brand alignment*

The branding of The Alliance was seen by the AGB as being crucial to the forming of the required culture. Private Company Two informant A4 (at the time a member of the AGB) said that the AGB gave specific attention to “...*the symbolic aspects of that identity, that get people together, the new blue and black uniform, having a new logo, having a social club...*”. Private Company Two informant A5, a member of the AGB from the start, said that the intention from the start was to “...*be a new brand, we are a separate entity from either of our parent companies...a whole fresh one, new branding, new name that everyone agrees on.*”

The new identity presents distinctly at the office/depot and on motor vehicles and equipment. All employees of all three alliance participants are located in the one three-year old, spacious, well maintained building. These premises compare favourably with the GovCom headquarters building which is 10–15 year old and worn. The Alliance premises were newer and fresher, suggesting that this artefact of The Alliance and GovCom culture would not be creating any issue of relative importance or worthiness between the employees of the principal and steward. The Alliance premises, staff uniforms, motor vehicles and major equipment bear only the business name and logo of The Alliance, with those of the three participants not being used at all. Importantly the Auditor-General (2010) observed that the employees of the three alliance members work closely together and identify by using the shared, new business name (Auditor-General, 2010). Private Company Two informant A4 said the culture of The Alliance “...*was separate from that of each member that they identify with their parent companies but that they identify more with the team that is delivering under the brand of The Alliance.*”

5.2.3.3.2.3 *People initiatives*

Private Company Two informant A4 said that in 2005 the AGB realised that the operational changes which were the objective of the new alliance would require change in the behaviour of all alliance employees: “...*because going from a schedule of rates to an alliance...*” amounted to “...*changing roles from command and control to collectively collaborate in a work relationship.*” To achieve this

change in the behaviour of individuals the AGB opened up all positions to all Alliance employees and required in the contract that a significant proportion of The Alliance be GovCom employees.

Opening up all positions to employees of the three participant organisations who were employed in The Alliance was an AGB policy decision with the objective “... to attract, retain and develop skilled staff, through staff exchanges within The Alliance, and enhancing the commercial skills of GovCom staff through partnering with the private sector” (Auditor-General, 2010). If a position within The Alliance becomes vacant the appointment is made against the criteria of ‘Best for Alliance’. An example provided was the Customer Relations Position which was held by a GovCom person but when it became vacant during 2010 a Private Company One person from within The Alliance was appointed. This increased career opportunities both by way of the larger, combined organisation and by the extra scope created by steadily increasing the capital works. Private Company Two informant A4 said “...it created the ability to bring young people into the organisation, into an aging workforce which is the water industry.” In addition the Auditor-General accepted GovCom’s opinion that the low turn-over rate was achieved because The Alliance “...provides staff with more interesting and diverse jobs, with greater opportunities for new experiences and learning, than was the case... [before the alliance]” (Auditor-General, 2010).

The decision to retain a significant proportion of GovCom employees in The Alliance was reported by the informants to have contributed to the alliance’s success in achieving its sense of responsibility to GovCom and the water system. Since commencement the GovCom staffing has remained at approximately 30% of the employees in The Alliance. Quite pointedly GovCom informant A2 said that GovCom “...wanted to maintain a legacy of its own people who had the necessary knowledge of the water system....to actually know the intricacies of the system and to actually be able to operate the system [which]...was not a skill we wanted to contract out.”

5.2.3.3.3 Clear contractual outcomes

All five informants said the annual adjustment of KPI targets was central to promoting a sense of responsibility on the part of The Alliance participants. The Agreement provides that the targets be adjusted annually by a unanimous decision by

AGB in advance of the next financial year. Examples of targets provided by informants were: more focus on safety and less focus on community, less focus on innovation, and more focus on timely delivery of projects. GovCom informant A1 characterised this adjustment as “...*part of the continuous improvement cycle, just trying to modify how we can get the best out of The Alliance.*” The two Private Company Two informants A3 and A4 were comfortable about the annual adjustment process, with A3 saying “*They are re-weighting and re-wording slightly the emphasis of the KPIs this coming year. You always review it and always make adjustments and the bar rises every year, it doesn’t stay static so we take great pride in The Alliance being number one.*”

GovCom informant A1 said that the practice is for these to be proposed by GovCom, negotiated and then signed off. This adjustment to the targets is conditional upon the unanimous agreement of all three participants. Private Company Two informant A4 said that their company looks at the plans of GovCom and seeks to be a part of that plan, giving specific attention to customers, the government stakeholders, the environment and innovation. Private Company One informant A5 saw the annual adjustment as a way to clearly signal the importance of one particular objective and bring focus and achieve substantial improvement in performance. It was apparent that the informants saw this adjustment not only as a financial reward system but also as a way of ensuring clear focus and agreement as to what counts to the principal. Private Company One informant A5 gave the example of burst water mains repairs which typically had cost from \$2,000 to \$3,000 per event. The target cost was then set at \$2,000. Informant A5 advised that through the KPIs and the margin adjustment “...*today, the average burst main costs about \$1,300 or \$1,400 because the price has been driven down because people have been concentrating on doing it better.*”

This refocusing of objectives is particularly important in the water industry where contract terms of 25 years are not uncommon and in The Alliance case the term is about 10 years. If there was not a mechanism to adjust the immediate objectives then it is highly likely that the combination of the principal not specifying what is important and the agent being rewarded for outcomes which are no longer important to the principal would result in a failure of stewardship of the infrastructure.

This contractually-based, genuine preparedness of all participants to regularly adjust the immediate objectives of the long-term contract would appear to be a good fit with the long-term and evolutionary nature of urban water services. Whilst the unqualified acceptance by private company informants of the right of GovCom to adjust performance requirements might of itself be unremarkable, what is highly important is the demonstrated consistent capability of a government entity to negotiate targets for the private companies which are actually the current goals and objectives of the government entity. This complete convergence of the goals of the principal and the agent presents as a model which governments as principals can adopt to achieve stewardship of critical infrastructures.

5.2.3.3.4 *Incentives to private participants*

Direct incentives were seen by the informants as crucial to sense of responsibility on the part of The Alliance participants. These incentives are: the longer-term contract for maintenance work than was the norm for the more common construction work, the gain-share payment arrangements, and the possibility of gaining additional work.

No data was available in respect of any contractual provision for the extension of the contract beyond the 10-year term and the matter of the term of the contract was literally not remarkable for the five informants. The exception was Private Company One informant A5 who from his perspective as the civil works participant saw benefit in the longer term because “...*the alliances that we [Private Company Two] have with government are beneficial in different ways for both parties, I mean we are more outcome-orientated than government, so they don't have that drive that we have, but they are more likely to invest in innovation and strategies that may cost money but have a longer-term effect ...*”. The 10-year term made it viable for Private Company One to introduce extensive technological innovation, in particular the water mains relining technologies (Auditor-General, 2010). This finding would appear to be an extension of the findings that The Alliance with its inclusion of employees who operate and maintain the system in the capital works decision-making leads to benefits which are realised in the longer term.

The financial incentives to the private participants applied to O&M and capital works were set out in *Section 5.2.2.4 Payment arrangements*. All three private participant informants were strongly of the view that these arrangements,

with their combination of annual refocusing of KPI targets and reward linked to the achievement of those targets or the sharing of gain, had a strong positive impact upon the sense of responsibility of Alliance participants.

The sense of responsibility to GovCom on the part of Alliance participants was particularly apparent in respect of winning capital works projects for The Alliance. As the entire share of the 'gain' is net of any costs the private participants are incentivised to contribute to The Alliance winning the bids to carry out the projects. This was held to lead to the lowest possible estimated cost for the job so that the work did not go to another party. GovCom was found to then benefit further, as once the job was won by The Alliance the private participants then sought to innovate to better the performance indicators attached to the individual project and share the gain. GovCom similarly benefits monetarily by way of the gain–share/pain–share provision and also by way of satisfaction of goals and objectives, for example replacing water mains and more efficient treatment of sewage.

Additional work came from growth in the capital works performed for GovCom and from work for other water entities in the name of The Alliance. Capital work that is allocated to The Alliance has increased. The Auditor-General recorded that in 2006–07 The Alliance was awarded about \$30m of the GovCom capital works expenditure (Auditor-General, 2010). Informants advised that capital works of about \$50m were awarded to The Alliance in 2011. In 2011 the scope of the capital works performed by The Alliance was further expanded by the transfer of the capital works design and feasibility function from GovCom into The Alliance. The possibility of obtaining a similar, continuing amount of capital work or indeed an even greater amount is held by informants to engender a very strong sense of responsibility on the part of Alliance participants. The additional work for other water entities in the name of The Alliance has increased from a negligible amount at the time of forming The Alliance to being a significant component of the \$22m unregulated revenue reported in 2006–07 (Auditor-General, 2010).

5.2.4 Significance of the findings

These findings strongly suggest that The Alliance offers an innovative example of the alliance model which has achieved stewardship of critical infrastructure. Of interest is the progression of alliances since Rees (1998) categorised alliances as a type of the partial divestiture form of privatisation. As there was no divestiture of

assets by GovCom when it formed The Alliance it is clear that this innovation has extended the options as to the forms of privatisation. The key findings were:

- The Alliance operates in a highly regulated and mature industry environment.
- The Alliance is an innovative, ‘virtual’ form of alliance characterised by all participants retaining their respective legal identities.
- This form of privatisation allowed the government to retain ownership of the water infrastructure assets.
- The mixed government/private sector form of alliance has achieved stewardship of the infrastructure, with greater efficiency than the previous schedule of rates arrangements.
- Such stewardship included a legacy for future generations in that GovCom has maintained the capability to operate the system within its staff.
- The private companies acted in the interests of the principal. The private companies *had not* performed any extraordinary acts when acting in the interests of the principal and the principal had no expectation that they do so.
- The *acting in the interests* was within a contractual relationship configured in accordance with Agency Theory prescriptions, particularly the incentive payments which were found to link strongly to goal alignment and contractual compliance.
- All alliance participants evidenced a strong sense of responsibility to the principal, GovCom.
- Such a sense of responsibility was highly important to achieving stewardship behaviour, and from the perspective of the principal was essential to the relationship.
- GovCom consciously took a number of actions which have contributed strongly to the sense of responsibility on the part of The Alliance participants and their employees.

A strong theme across the findings was that GovCom had an initial disposition to configuring a highly collaborative relationship which capitalised upon the strengths of government or private participants and allocated risk to the participant who could best bear that particular risk. GovCom chose private participants who had existing experience in carrying out O&M work and in alliances. In turn the principal mixed the workforces together and had them present as a single, new brand identity. The activities of the combined staff were focused by transparent shared information, close measurement and reporting of services through KPIs which were adjusted annually to reflect GovCom's evolving goals and objectives. Payment to the private participants was dependent on achieving of those KPIs and by achieving a gain on capital works. Those payments together with the availability of additional work were found to motivate the private participants to act with a strong sense of responsibility.

The most significant finding is that the principal has had a vision or objective of achieving a high level of stewardship of the water system and has achieved this by a highly integrated configuration of contractual and structural arrangements, according to the prescriptions of Agency Theory, but with the private companies demonstrating stewardship-like behaviours as prescribed by Stewardship Theory. The principal had a clear understanding of stewardship and actions that would lead to a sense of responsibility by private participant companies and Alliance employees. Further, notwithstanding being a government entity, GovCom demonstrated very precise knowledge of its own business and the capability to manage this highly commercial relationship.

5.3 CASE STUDY B

5.3.1 Introduction

Case Study B is the joint venture (Joint Venture) created by a government-owned company referred to in this thesis as GOCO, and two private companies: one, an Australian-based energy company (Energy Co.); and the other an overseas-based utilities company (Overseas Utilities Co.). GOCO is responsible for the provision of energy, water and waste water services to 150,000 customers (GOCO A R 2011) in a regional centre, an area of approximately 2,400 square kilometres (Professor, 2008). It is the water and waste water services operations of the joint venture that form this case study.

This thesis firstly describes the key features of the joint venture. Secondly, the findings from this case study are assembled utilising a framework constructed around the three areas targeted by this research: stewardship behaviour, sense of responsibility and actions to increase sense of responsibility. Thirdly, the findings are probed to understand their significance.

5.3.2 Key features of the joint venture

The Joint Venture exists to carry out the operation, maintenance and some of the capital works of the regional centre's water services infrastructure. This section first describes that water system to provide a context for the findings as to stewardship and sense of responsibility. Secondly, the legal form of the Joint Venture and the objectives which the regional centre's government sought to achieve when establishing the Joint Venture are described. Thirdly, the environment of regulation and reporting within which the Joint Venture operates are examined. Fourthly, the Joint Venture payment arrangements are explained.

5.3.2.1 *The water service*

The regional centre's water service is comprised of water catchments, storage reservoirs, treatment plants and pipelines, and sewage treatment plants which provide water, sewerage and recycled water services (GOCO AR 2011). Water and sewerage services provided to customers in 2011 amounted to \$220m and net assets were \$1b (GOCO AR 2011). The Joint Venture has approximately 1,100 employees (JV AR 2011).

5.3.2.2 *Legal form and objectives*

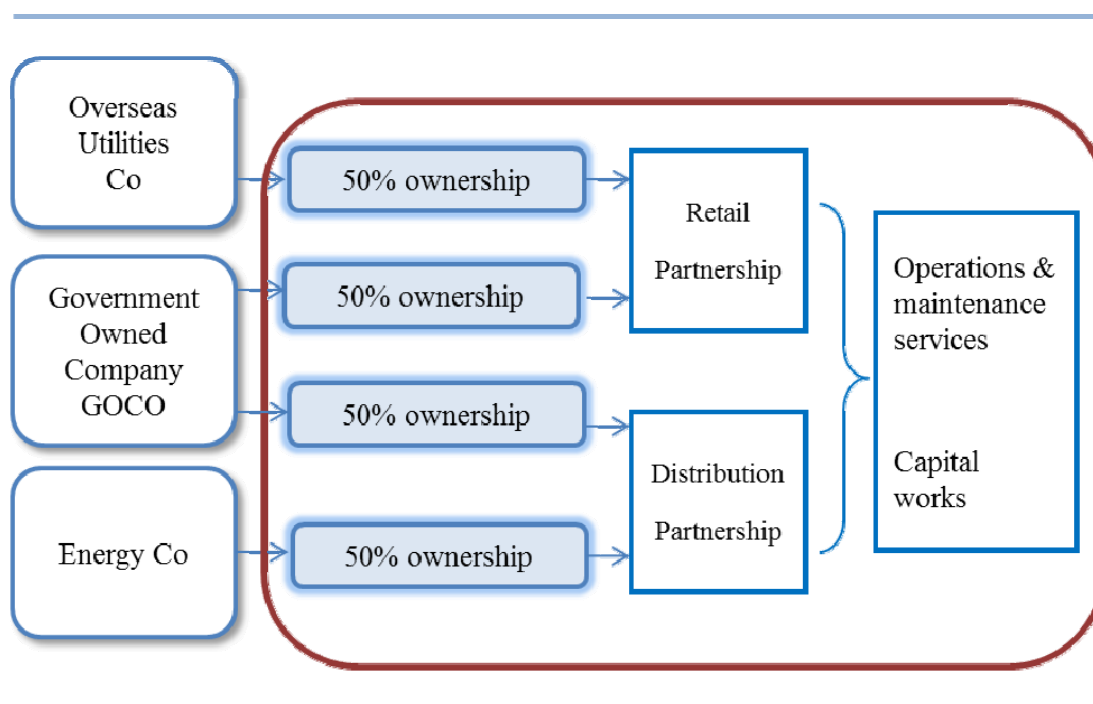
The Joint Venture is not itself a company but rather is two partnerships involving three parties. GOCO is an unlisted public company owned by the regional centre government with two government Ministers being the shareholders. By way of regional centre legislation GOCO's main objectives are: to operate at least as efficiently as any comparable business, to maximise the sustainable return to the regional centre, to have regard to the interests of the community and encourage those interests, and to operate with the objective of ecologically sustainable development. In 1999, to meet the challenges of an energy market about to be subject to full competition, the government of the regional centre sought expressions of interest from possible joint venture partners, limiting them by legislation which required that

GOCO “...maintain at least 50 per cent interest in the partnership...” (Professor, 2008). In 1999 the GOCO Board selected Energy Co. and both GOCO and Energy Co. contributed assets to the partnerships with the exception of the water and sewerage network which remains owned by GOCO. Because of regulatory requirements to separate the electricity distribution role from the electricity retailing role Energy Co. subsequently sold its interest in the distribution partnership to Overseas Utilities Co. The responsibilities of the two partnerships in respect of water matters are specified in the Services Agreement made between GOCO and the two private companies.

Energy Co. is a company listed on the Australian Stock Exchange website as operating Australia's largest retail energy and dual fuel customer base. In 2011 its approximate revenue was \$7b and assets \$6b (Energy Co. AR 2011). Overseas Utilities Co. is 100% owned by an overseas-based energy and utility company, having an approximate revenue of \$5b and net assets of about \$7b (OUC AR 2011).

The retail partnership is formed between GOCO and Energy Co. The distribution partnership is between GOCO and Overseas Utilities Co. The organisational structure and contractual outcomes are depicted diagrammatically in Figure 5.2.

Figure 5.2 Joint Venture



The focus of the case study is the ‘Partnerships Joint Venture’ within the red box. The structuring of retail activities separate from distribution anticipated requirements of the independent regulator that there be a clear separation between distribution and retail activities for the imminent opening of the electricity industry to competition. Electricity infrastructure assets previously owned by the regional centre government were sold into the distribution partnership, but the water and sewerage systems remain owned by GOCO (Professor, 2008), with the Joint Venture operating and maintaining these systems and providing services. As explained by GOCO informant B4 “...*the Corp. has become by way of structure of the contract, manager, negotiator as well as representative of the government as far as outcomes and objectives.*”

An insight as to why the water assets were not fully privatised is provided by a 1997 survey of the community which indicated that about 75% of the community did not want electricity sold but that about 85% did not want water and sewerage sold (Professor, 2008).

Whilst the legislation contains precautionary provisions to enable the dissolution of the partnership there is no term set for the operation of the partnership and all parties conduct themselves on the basis that the partnership is perpetual (Professor, 2008).

The two partnerships are governed by the Joint Governance Board (JGB) which is comprised of six members, of which three are appointed by GOCO and three are appointed by Energy Co. and Overseas Utilities Co. Board members are not directors in terms of the *Corporations Act 2001*; however, they adhere to the standards of integrity and performance required of directors under that Act. An overarching agreement requires board members to exercise their powers “in the best interests of the partnerships as a whole” (Professor, 2008, p. 629). This feature of the overarching agreement is explored in greater detail in *Section 5.3.3.1 Stewardship of infrastructure* and *Section 5.3.3.3 Actions to increase sense of responsibility*.

5.3.2.3 Regulation and reporting

The Joint Venture operates under the licences issued to GOCO within a regulatory environment that is very similar to that of other Australian urban water

systems, highly regulated and rich in publicly available information. The key elements of the environment are as follows.

The regional centre's utility services are regulated by the regional centre's independent regulator which licenses utility services and ensures compliance with licence conditions by requiring annual compliance and performance reporting. GOCO is subject to environmental regulation enacted by the regional centre (GOCO AR 2011).

The quality of drinking water is controlled by way of regional centre public health legislation which provides for the regional centre health department to issue drinking water licences (in this case to GOCO). The licence requires drinking water to be produced to the standards specified in the *Australian Drinking Water Guidelines 2004* (ADWG). These Guidelines have been adopted by all case study water systems.

Prices for services are determined by the independent regulator. The independent regulator has set the price direction for the five-year period from 1 July 2008.

Financial management of the Joint Venture is achieved by GOCO through its membership of the JGB. The management by the JGB is in practical terms managing and monitoring a Services Agreement which informant B3 advises “...is used to make clear what is the responsibility of the Joint Venture...the Services Agreement contains 160 services, 50 KPIs and has a 20-year term.”

Financial management of GOCO is the responsibility of the shareholder Ministers. GOCO must agree on objectives and priorities with the shareholders and detail these in a Statement of Corporate Intent (SCI) which is tabled in the regional centre parliament annually. Quarterly reporting against the SCI is made to the shareholders.

Customers not satisfied with Joint Venture decisions about their complaint have a right of review by the regional centre administrative tribunal, notwithstanding that the services are provided jointly by a private company.

GOCO submits an annual report which includes financial statements for GOCO Retail Co., GOCO Distribution Co., the Joint Venture and the consolidated financial statements for GOCO. GOCO makes an annual compliance and

performance report to the independent regulator as required by the issued licence. As a water service provider GOCO is required to report the occurrence of ‘notifiable’ incidents to the regional centre health department and to report annually in compliance with the drinking water licence as to actions taken by the Joint Venture to address any such incidents and generally manage and protect the quality of drinking water (Joint Venture: Annual Drinking Water Quality Report, 2010-11).

In addition GOCO participates in the National Water Commission annual comparison between like urban water services (National Water Commission, 2011).

There is significant detailed information available publicly on each organisation’s internet site. This reporting results in a high level of transparency as to the issues and outcomes of Joint Venture activities and in turn confidence in the data gathered in this research.

5.3.2.4 Payment arrangements

A more detailed explanation of the roles of GOCO and the Joint Venture is essential to understanding the arrangements for payment to the Joint Venture. GOCO informant B4 explained that “...*the difference between the two entities is that GOCO is to serve the customer, the community. ...For the Joint Venture the primary focus is on the bottom line.*” The JGB sets the profit target each year by negotiation within the GOCO Board, resolving the tensions between meeting the requirements of the private company shareholders for a commercial return and meeting the requirements of GOCO that the Service Agreement requirements are met and an adequate dividend paid.

The contract underpinning the Service Agreement has a term of 20 years and in 2010–11 provided payment to the Joint Venture of approximately \$100m. The payment is calculated on estimated total operating costs plus a fee (WSP, 2004). The contract provides for payment to the Joint Venture for the 160 services on a fixed price basis set in advance and for a fixed amount for each of the next four or five years and then a ‘reset’. The reset at four or five years integrates with the duration of the price path determined by the independent regulator for the particular service. Joint Venture informant B3 advised that “...*for four years, there is a four year price ... we get a bucket of money every year ... and we know what the services are [to be provided] ... we [Joint Venture] carry the risks ... increased salaries,*

chemicals and energy. We can't go back to GOCO and ask for extra." This long-term (up to five years) fixed price creates tensions as the Joint Venture shareholders seek to maintain their profit. Capital work carried out by the Joint Venture (\$50m in 2010-11) is funded by GOCO on a per project basis with the Joint Venture seeking to make its profit by carrying out the works at a cost less than the price negotiated with GOCO.

The payment arrangements require regular reporting against the performance indicators (50 of the 160 services have KPIs) and against the financial performance of the Joint Venture. This information is generated by the Joint Venture which provides corporate services to GOCO, reflecting the small, 30-person staff of this multi-utility policy and service purchaser entity. No issue as to information asymmetry was detected in the study, with the GOCO informant providing evidence of satisfaction with the information provided and shared between the Joint Venture and GOCO.

5.3.3 The findings

This section first explores whether there was stewardship of the infrastructure, and, if so, the nature of the stewardship behaviour of the Joint Venture. Secondly, whether there was sense of responsibility on the part of the Joint Venture to GOCO is explored together with an analysis of how important sense of responsibility was to there being stewardship behaviour. Thirdly, the actions taken to increase sense of responsibility are unpacked.

5.3.3.1 *Stewardship of infrastructure*

In the preceding Alliance case study the public values of efficient use of public resources and quality of services provided to customers were found to be most important to the public. Consideration of the public values in play in respect of the regional centre's water system revealed that those same two values were the most important. Accordingly, this section first examines whether there has been efficient use of public resources, followed by an examination of the quality of services provided. The data are analysed to understand the level of performance of the Joint Venture.

5.3.3.1.1 *Efficient use of public resources*

The efficiency of use of public resources was assessed in the preceding case study by way of the comparison made in the annual *National Water Commission Report: Urban water utilities*. The 2010 operating costs for GOCO for water and sewage per property are the second highest of the 11 water systems in the 100,000 plus connected properties, with GOCO being the highest or second highest in each of the four preceding years (National Water Commission, 2011). Similarly the data in respect of the typical residential water and sewerage bill showed that in 2009–10 GOCO was the fourth highest in Australia, and third highest and highest in the two preceding years.

This consistent position as highest or near highest in cost of production and billing suggests the possibility of either GOCO not efficiently using public resources or the comparison between systems not being valid because the systems are not sufficiently similar with regards to the physical dimensions, for example scarcity of water, differing investments as to sustainability or policy decisions which amount to a subsidisation external to the accounts of an entity. However, the archival study revealed substantial ongoing capital expenditure to address drought conditions and provide water security on a sustainable basis. The regional centre is situated inland in a region characterised by rainfall lower than that enjoyed by many of the other urban water services in the *National Performance Report 2009-2010: Urban water utilities* comparison. Accordingly it may be reasonable to conclude that the water service for this regional centre must continually incur costs above those of the other systems in the report. This ongoing additional cost may be the reason the operating cost has been virtually the highest in Australia for the last three years and the actual amount billed is near the highest. The independent regulator has acknowledged the significant capital cost of the water security initiatives as necessary to meet the needs of the regional centre, noting that the cost will put further upward pressure on water prices. The paper does not criticise GOCO or the Joint Venture in respect of the efficient use of public resources. Accordingly, notwithstanding the high cost and charges for services, it is concluded that the Joint Venture has achieved efficient use of public resources.

5.3.3.1.2 *Quality of services*

The quality of services was measured by the performance indicators reported in the *National Performance Report: Urban water utilities*. GOCO reported consistently fewer than five complaints for every 1,000 properties for the three years to 2009–10, such a standard being achieved by five of the eight other comparable water entities (National Water Commission, 2011). GOCO has for the three years to 2009–10 reported a consistent level of unplanned interruptions which is below the median for the nine utilities compared (National Water Commission, 2011). In respect of the efficiency of the customer service centre the report of the independent regulator revealed that in 2009–10 the average waiting time for calls to be answered on non-emergency numbers was 33 seconds and for emergency numbers 23 seconds. Over the five-year period emergency call centre performance has improved on a number of indicators and remained steady on others (Independent Regulator: Report, 2011).

A search of archival sources and specific questioning in the informant study sought to identify any significant adverse mention of the quality of services but none was found; it was found that the quality of services was high.

In summary, the evidence of the National Water Commission and the archival and informant studies is that the public values of efficient use of public resources and quality of service have been satisfied by the Joint Venture. It is concluded that the Joint Venture has achieved stewardship of the water system.

5.3.3.1.3 *Stewardship behaviour*

The following paragraphs assemble the data as to the nature of stewardship behaviour, whether there was contractual compliance, or the steward acted in the interests of the principal, or further where the Joint Venture sometimes took an extraordinary act in the interests of GOCO.

The literature, archival and informant interview studies revealed no instance of there not being contractual compliance. Indeed there was found to be a strong culture of meeting contractual requirements on the part of the Joint Venture.

The thesis then sought to examine whether the Joint Venture acted in the interests of the principal, and whether the actions were at a level that is something more than contractual compliance, as is the tenet of Stewardship Theory. This case

study water system is characterised by two unique features which created considerable difficulty in identifying whether the very credible outcomes of the work of the Joint Venture were attributable to the Joint Venture and its employees doing something more as suggested by Stewardship theorists or were compliance with highly specified contractual arrangements; that is Stewardship Theory behaviour or Agency Theory behaviour. The features are the 50% ownership of the Joint Venture by GOCO and the legislative requirement that GOCO act in the interests of the regional centre in several specific respects. These requirements have been passed on to the Joint Venture by way of such contractual devices as the Joint Venture overarching agreement (Professor, 2008) and the Services Agreement which specifies the 160 services, performance indicators and targets.

The 50% ownership by GOCO of the Joint Venture was offered by informants as a universal explanation for the significant achievements of the Joint Venture. The head of the Joint Venture water division, informant B3, when asked what GOCO did that resulted in the evident high level of responsibility on the part of the Joint Venture to GOCO responded with an explanation of the membership of the governance board, the monthly reporting against KPIs and the transparency, saying that the only thing which could be skimmed upon was the maintenance and then that would show up in service levels not being maintained. A second Joint Venture informant, B1, when asked what GOCO does to encourage the Joint Venture to continue to act with genuine responsibility to the community for the water system said “...when you own 50% of the company you’ve got a fair bit of influence...and if you think it is a good idea...then nine times out of ten then they [Joint Venture] will do it...”. Yet both these informants portrayed the Joint Venture as being closely aligned with the goals of GOCO, confirming the findings of Professor (2008) and archival studies that the Joint Venture continually acts in the interests of GOCO. Informant B1 said “*we have a very strong working relationship and partnership*” and gave the example of water system staff working unstintingly during a suburban bushfire tragedy to restore water treatment and sewerage treatment plants in the absence of electricity supply. Similarly, informant B3 gave an elegant example of staff acting in the interests of GOCO saying that staff are quite conscious that they need to do the best job ‘for water’: “...the guy who is digging up a hole to fix a pipe, he does care about GOCO because he used to be a GOCO employee...”.

The second distinguishing feature was the legislative requirement that GOCO act in the interests of the regional centre in several specific respects. GOCO informant B4 had made the point that understanding whether the Joint Venture had acted in the interests of GOCO was clear as the requirements of the legislation were set out in the Service Agreement which bound the Joint Venture and which was the subject of quite comprehensive regulation and reporting to the JGB, shareholder ministers and independent regulators. The legislation requires that GOCO is to: operate at least as efficiently as any comparable business, maximise the sustainable return to the regional centre, to have regard to the interests of the community and encourage those interests, and to operate in accordance with the objective of ecologically sustainable development. GOCO informant B4 said the Services Agreement has “*all the services listed out and 50 KPIs [not all services have KPIs]...*”. The archival study and informant study found that there was a strong record of the Joint Venture complying with contractual terms, budgets and KPIs, in particular the regular findings of the independent regulator that GOCO has met the comprehensive requirements of the legislation. This strong satisfaction of quite comprehensive and highly specified contractual terms begs the question as to what constitutes that Stewardship Theory’s higher level of behaviour; that is, what is the notion of acting in the interests of the principal if the contractual terms set the level of performance quite high and comprehensively?

The final aspect of performance to be explored is whether the Joint Venture contributed that something more which Stewardship Theory asserts characterises the behaviour of the steward. The Interview Protocol was used to explore whether the Joint Venture sometimes performed an extraordinary act in the interests of GOCO. There were no findings as to extraordinary actions that brought benefit to GOCO. There were findings that show that the Joint Venture ownership and governance arrangements would preclude the Joint Venture or a member behaving in that manner. GOCO and Joint Venture informants saw the concept of an entity performing an extraordinary act as being the incurring of costs which were not going to be reimbursed by GOCO and did not see a place in the operation of the Joint Venture for such actions. Joint Venture informant B3 explained that all planned work must be put to the JGB and a determination is made whether the matter is in the scope of the Service Agreement. If the JGB determines that the matter is within the

scope of the agreement then the Joint Venture must do the work within the existing payment from GOCO. If determined that the matter is outside the scope of the Service Agreement then it is the responsibility of the JGB to determine whether to do the work and if so determine the source of funding, for example the Joint Venture out of funds that would be utilised to pay dividends to owners or for GOCO to be requested to pay. Either scenario requires that the JGB with its 50% membership from GOCO representatives make the decision, thereby involving GOCO in the decision. In this way the very design of the Joint Venture establishes limits upon expectations and pressures for the Joint Venture to contribute any more than the overall deliverables contemplated in the contractual arrangements.

In summary, it was found that the level of stewardship behaviour of the Joint Venture was contractual compliance which encompasses acting in the interests of GOCO. Indeed for all informants it was unchallengeable that the Joint Venture conducts itself in the interests of GOCO, pointing to the strength of this Joint Venture privatisation model — 50% ownership by government, strong government membership of the governance mechanism and staff with a very strong sense of responsibility to the particular water system. It was found that there was a limit to the Joint Venture acting in the interests of GOCO, such a limit being established by the governance and ownership arrangements; that is the contractual terms. This thesis now moves to the findings in respect of sense of responsibility and then the actions which were taken by the principal or agent to increase that sense of responsibility on the part of the Joint Venture.

5.3.3.2 Sense of responsibility

This section first explores whether there was sense of responsibility on the part of the Joint Venture to GOCO and then explores how important that sense of responsibility was to stewardship behaviour on the part of the Joint Venture.

The Joint Venture demonstrated a highly professional focus upon the goals and objectives of GOCO. An examination of the GOCO annual reports revealed that for all services a high standard had been achieved by the Joint Venture and there had been no failures to achieve GOCO's published targets. Regard was had to the annual and ad hoc reports of the independent regulator. The independent regulator conducts an annual review of the performance of utilities licenced to operate in its jurisdiction, the review also encompasses the data reported to other agencies such as the

administrative tribunal. The latest independent regulator's review report revealed no criticism or indication that the Joint Venture had acted other than with a sense of responsibility to GOCO.

The informant study revealed that the informants considered sense of responsibility on the part of the Joint Venture to be absolute, and near unchallengeable, presenting a continuation of the previously discussed theme that the preparedness of the Joint Venture to behave as a steward was unchallengeable. The informants invariably explained what caused that sense of responsibility by turning to: the long-term water industry staff, 50% ownership by GOCO, and the Joint Venture's tight 'belonging' to the close-knit local community. Further, the area served by Joint Venture is virtually only the regional centre and, as it is inland from the east coast of Australia, it is so separate from other dormitory areas that all Joint Venture employees reside in the area they serve. Many are long-term water industry staff. Joint Venture is the only water sector employer in the regional centre resulting in those employees who were employed by GOCO at the time of privatisation being seconded to the Joint Venture and remaining there. As put by Joint Venture informant B1, *"I've been with this organisation coming close to 30 years. So I worked for GOCO prior to the joint venture and I think a lot of the employees still see themselves as delivering services for regional centre, for the local community. So whether it's GOCO or Joint Venture it doesn't matter."* An example of how this perspective benefits the principal was provided by Joint Venture informant B3, who said that *"...the staff of Joint Venture do not distinguish between GOCO and Joint Venture. Everybody mixes up the two ... my message to my staff is that if they fail we fail."* Having regard to the data from the studies it is concluded that there is a very strong sense of responsibility on the part of the Joint Venture.

This research now examines how important sense of responsibility was to there being stewardship-like behaviour on the part of the Joint Venture. This research concluded that there was a very strong sense of responsibility, having considered the evidence as to the strong stewardship of the system by the Joint Venture and the evidence from the informants as to the strong alignment of the Joint Venture and its employees with GOCO's goals and objectives. These findings of strong alignment would reasonably lead to the conclusion that sense of responsibility is important but the next step, the determination of whether that importance is so

great that sense of responsibility is essential, proves difficult as the Joint Venture case study does not offer a scenario where there was no sense of responsibility. Put simply, an exhaustive search for evidence in the literature, archival sources and the informant interviews did not reveal any evidence of the Joint Venture acting other than in the interests of the principal GOCO. If there was any evidence of the Joint Venture not acting in the interests of the principal this scenario would then allow a comparison and several possible conclusions dependent upon whether stewardship was also found. Accordingly, within the limits of the data, the possibilities are explored by speculating as to the probability of there being stewardship behaviour by the Joint Venture if there was no sense of responsibility.

Any scenario which portrayed stewardship behaviour and no sense of responsibility to the principal would have the steward acting in the interests of the principal, pursuing the goals and objectives of the principal but with the steward organisation having its sense of responsibility directed towards another party, such as its owner or a conflicting ideology like user pays. Alternatively, in this scenario the organisation which is achieving the goals of the principal could have no sense of responsibility to any organisation or ideology. This would appear to be a scenario of a typical Agency Theory relationship, where the contractual terms have been specified with such clarity and foresight that the goals and objectives of the principal are capable of being met and have been met. This is highly unlikely in the circumstances of a contractual period of any more than 12 months and not at all possible in the context of the regional centre water system infrastructure O&M where the contract is for a 20-year term with four- and five-year resets of payments and performance measure targets. The literal contract could not alone ensure the alignment of the steward with the goals and objectives of the principal over those timeframes. Yet there was stewardship of the water system and there was sense of responsibility and the stewardship-like behaviour of acting in the interests of the principal, suggesting that it is highly likely that the sense of responsibility to the principal motivates the steward to be so aligned and therefore is highly important to the agent acting in the interests of the principal.

Another perspective on the importance of sense of responsibility is the requirement by the principal, GOCO. The scenario would be the Joint Venture pursuing the goals and objectives of the principal and complying with all contractual

requirements but having no sense of responsibility to GOCO, notwithstanding GOCO being both the principal and a 50% owner of the Joint Venture. Whilst it is possible that a principal who is at arm's length from the agent/steward might accept a contractual relationship that delivers the contractual outcomes and where the agent/steward has no sense of responsibility it is unlikely that a 50% owner would. That 50% ownership brings with it a 50% membership of the JGB. The GOCO involvement and control is further tightened by those three JGB members also being GOCO Board Members. It is highly unlikely, indeed beyond probability, that those board members in common would permit the Joint Venture to evolve into an organisation that did not have an absolute sense of responsibility to GOCO. This is particularly so in respect to safe drinking water as in that water system the Joint Venture is required to treat and deliver safe drinking water. Similarly, when treating waste water for release into the environment the Joint Venture has the potential to impact adversely on GOCO's goals, objectives and reputation. The risk to the principal if the agent does not have a sense of responsibility is immense and it is not possible to conceive of a principal being content to have a contractual party which has such impact on the principal not having a sense of responsibility to the principal. For those reasons, taking the perspective of the principal, it is concluded that it is essential that the participants of the Joint Venture at all times have a sense of responsibility to GOCO.

In summary, it was found that there was a very strong sense of responsibility on the part of the Joint Venture to GOCO. The importance of sense of responsibility to the agent acting in the interests of the principal was examined through two lenses. The first was an examination of the data for a causal link which revealed that sense of responsibility was highly important to the agent acting in the interests of the principal. The second was an examination from the perspective of the principal and shareholder which revealed that sense of responsibility was essential. This development of the findings now turns to the actions which impact upon this sense of responsibility.

5.3.3.3 Actions to increase sense of responsibility

The preceding section of this thesis assembled the evidence as to sense of responsibility and the link between sense of responsibility and the agent acting in the interests of the principal. This section examines the data in respect of the actions of

GOCO (the principal) which were found to have established or increased sense of responsibility on the part of the Joint Venture. The data formed into three themes which are explored in the following paragraphs:

- configuration of the Joint Venture;
- employee dedication to the water industry; and
- brand alignment.

5.3.3.3.1 *Configuration of the joint venture*

Two aspects of the configuration of the Joint Venture which were found to be key to achieving sense of responsibility are the 50% ownership by the principal, GOCO, and the arrangements as to the JGB membership.

The 50% ownership of the two partnerships (distribution and retail) is inviolate, having been mandated by legislation passed by the regional centre government which prescribes that GOCO “...maintain at least 50 per cent interest in the partnership...” (Professor, 2008). The informants provided a body of comment regarding sense of responsibility to the principal (GOCO) which was premised upon the significant ownership (50%). Joint Venture informant B1 when asked what GOCO did to encourage sense of responsibility on the part of the Joint Venture said that “...when you own 50% of the company you’ve got a fair bit of influence ... and they’re basically interested if it is good for [regional centre].” Again the ‘local’ alignment of owner to board, to Joint Venture, to service, to local community emerged as removing the possibility of the agent acting in a manner other than with sense of responsibility.

The contribution of the board to sense of responsibility on the part of the Joint Venture was described by Joint Venture informant B3 who said: “*Board-to-board responsibility is very strong. Very transparent as to what we are providing to GOCO. Could skimp on maintenance, doesn’t happen.*” The relationship between the entities which constituted the Joint Venture, GOCO and Energy Co. was examined by Professor (2008) who observed that “In many respects the two parties retain their distinct identities ... But, within the joint venture, there is clearly a central organisational structure in which neither party is subservient to the other, so that one of the primary conditions for a real partnership seems to be satisfied.”

An insight into the strong relationship between boards was provided by Joint Venture informant B1 who said that *“We [Joint Venture] have a very strong working relationship and partnership [with GOCO]. I suppose what helps there as well, is that we both have the same chairman.”* Interrogation of the 2011 annual reports by the two entities revealed that: the chair of each is the same person, three of the GOCO Board Members are JGB members, and one of those is also Managing Director of GOCO. Of the other three members of the JGB one represents Energy Co. and two represent International Utilities Co. All six JGB members are required by the Joint Venture overarching agreement to exercise their powers “in the best interests of the partnerships as a whole” (Professor, 2008, p. 604). In summary the authority conferred that the 50% ownership of the privatised entity has allowed the government entity to firmly direct the activities of the steward to those wanted by the government entity, principally by way of establishing a strong presence on the JGB and also by overlapping the membership of the steward entity board with the board and management of the principal entity.

5.3.3.3.2 *Employee dedication to the water industry*

The long service of employees with both the water industry and with the Joint Venture and its predecessors was a strong thread through the stories related by the informants. Joint Venture informant B3 recounted difficulties experienced by staff in moving from federal government funding for capital works to a ‘value for money’ basis which could withstand the scrutiny of the independent regulator. However, informant B3, together with other informants, went on to describe the strong sense of responsibility saying *“...the majority of the technical people and the operational people...they are responsible for building some of these things, it is their little baby...so there is significant buy-in from Joint Venture staff to the business...”*. GOCO informant B4 confirmed there was a strong sense of responsibility to the regional centre water system on the part of these long-term employees saying *“...it was their water and sewerage business ... they always had their ownership ... engineers in utilities never strike, well water and utilities, because their community focus is too high.”*

Questioning of informants as to why employees stayed such long times elicited from GOCO informant B3 the observation that *“...part of the reason is that if you are in water there is usually only one provider in the city so you have to stick*

with that provider, more or less, water supply. There is some movement, but generally there are a lot of long lifers.” Joint Venture informant A1 had himself worked for the Joint Venture or its predecessors for 30 years and provided a telling insight saying “*...I think a lot of employees still see themselves as delivering services for the regional centre, for the local community, so whether its GOCO or Joint Venture, it doesn’t matter.*” The learning then is that employees who were previously employed by a government operator of a water system when transitioned to a privatised operator of that same system display a strong sense of responsibility to the system and the government entity responsible for the system.

5.3.3.3 Brand alignment

The Joint Venture’s brand emerged as a major driver of sense of responsibility and was a topic which provided valuable insights into the principal–steward relationship. This section firstly discusses the history of the development of the Joint Venture brand. Secondly, the special way in which the brand drives sense of responsibility is unpacked. Thirdly, several instances of attitude to the brand on the part of Joint Venture participants and the community are related to obtain insights into the relationship between steward and principal.

The Joint Venture was created as an alternative to full privatisation of electricity, water and waste water services, and the multi-utility model reflects the relatively small population which in 2012 was approximately 370,000. Because the joint venture arrangement brought together electricity and water/waste water with gas a shared Joint Venture brand was adopted. The aggressive competition in the retail energy services market required that the brand be strongly promoted. This was (and still is) achieved through advertising and promotion, community grants, assistance and sponsorships. This visibility of the brand is extremely high with the brand being dominant at many regional centre events. In essence a water service monopoly provider has had the benefit of a brand development program largely funded by activities other than the water services.

This very strong brand under which the water services are supplied is overlaid with a near exact match between the regional centre served and the area served by the Joint Venture. Because that regional centre is surrounded by land dedicated to rural activities there is a strong sense of community in the area served by the Joint Venture. Joint Venture informant B2 observed that “*...the size of*

[regional centre] is a small country town ...[which] makes the Joint Venture multi-utility model a good fit which leads to ...efficiencies, benefits, one answer shop for customers.” In respect of Joint Venture employees’ sense of responsibility informant B2 said “*...we are like a country town and we are very proud of our brand, and while GOCO are in their own brand...we try to have a unified brand in terms of our retail distribution...we do believe in a unified culture and one of the things we do is having a common EBA [Enterprise Bargaining Agreement] across the different organisations [GOCO and Joint Venture] as well, there isn’t any favouritism.”* Joint Venture informant B3 put the impact of the strong local alignment succinctly “*...if you do something wrong people will complain and people in [regional centre] are pretty quick to complain. It is a small town.”*

Yet GOCO has its own brand with GOCO informant B4 observing that “*Basically Joint Venture is the face because they do electricity, gas and the water and deal with our customers, so they are the face, GOCO has to stay in the background...We [GOCO] do sponsor things, but it’s at a lot lower level than Joint Venture...*”. The brand of the steward is derived principally from that of the principal, and Joint Venture informant B3 observed that “*...the staff of Joint Venture do not distinguish between GOCO and Joint Venture. Everybody mixes up the two.”* Joint Venture informant B1 said:

Joint Venture still gets called GOCO. People don’t really differentiate. As far as they are concerned we provide their electricity, their gas and their water and their waste water services. It’s more historical than anything else, you know Joint Venture and its predecessors have been around since the early 1900s in [regional centre].

5.3.4 Significance of findings

At the highest level the findings reveal that the joint venture partnership in combination with a traditional highly specified principal/agent contract and service agreement between GOCO and the Joint Venture have achieved stewardship of the water service. In addition it was found that this stewardship was accompanied by a strong sense of responsibility to GOCO, and to providing water services to the regional centre’s community. Significant findings were developed based upon data which, because of the highly regulated and public nature of the water industry and availability of several informants who had been employed by GOCO at the time of

forming the joint venture, was found to be highly reliable. The key findings were that:

- The Joint Venture operates in a highly regulated and mature industry environment viz. the regional centre utilities licensing regime.
- The government and private companies have created an authentic joint venture which has achieved stewardship of the water service.
- The Joint Venture as agent in a contractual relationship configured in accordance with Agency Theory, acted strongly in the interests of the principal, but within the contractual terms.
- There was no extraordinary action on the part of the Joint Venture which was not expected by its owners (one of which was the principal) to act to its own detriment. The governance arrangements did not allow the Joint Venture (or its two private shareholders) any discretion to decide to independently act in the interests of the principal.
- There was a very strong sense of responsibility on the part of the agent to the principal. The attribute was highly important to the stewardship-like behaviour of acting in the interests of the principal. In addition it was concluded that from the perspective of the principal and shareholder sense of responsibility was essential.
- The Joint Venture staff had a strong sense of responsibility to the provision of water services to the regional centre community.
- GOCO consciously took actions which have contributed strongly to the sense of responsibility on the part of the Joint Venture.

There is a strong possibility that stewardship of the water service was achieved because of the carefully configured example of joint venture privatisation. In respect of the nature of stewardship-like behaviour by the Joint Venture the finding was that the agent acted strongly in the interests of the principal but within the bounds of compliance with the contract.

The significance then is that this case study has provided an example where there has not merely been contractual compliance but a steward acting strongly in the interests of the principal and demonstrating a strong sense of responsibility to the

principal — all in the context of formal contractual arrangements which are highly specified. The unpacking of this tangle of Stewardship Theory and Agency Theory characteristics is made in *Chapter 6: Discussion*.

5.4 CASE STUDY C

5.4.1 Introduction

In the mid1990s the government entity, State Corp., established two alliances (North Alliance and South Alliance) to carry out O&M services and a small volume of minor capital works (less than \$1m) for drinking water, waste water, drainage and related customer services to adjacent segments of a metropolitan area (Development Bank, 2007). The water system remained owned by State Corp. with the O&M responsibilities of the alliances being specified in alliance contracts each made between State Corp. and two private participants: North Private Co. and South Private Co. These contracts were extended after some years and put to market with the new contracts running with an extension to 2011 (one of the two private participants was replaced). It is these early alliances collectively which are the focus of this case study. The term ‘early alliances’ reflects the pioneering application of alliance configurations to O&M and achieves de-identification.

The following sections of this thesis first describe the key features of the early alliances, including some detail of a single ‘Next Generation’ (NG) Alliance which replaced the two early alliances in 2011. Secondly, the findings as to stewardship behaviour, sense of responsibility and actions to increase sense of responsibility are assembled. These findings include deficiencies in the early alliance arrangements and the changes to address them introduced by State Corp. in 2011 by way of the NG Alliance. Thirdly, the key findings are probed to understand the possible significance of the findings from the early alliances case study.

5.4.2 Key features of the early alliances

Publicly-available documentation regarding the early alliances (i.e. their formation), the Development Bank reports of 2007 and 2011, and the 2011 Request for Proposals (RFP) by which State Corp. went to the market for the NG Alliance, allow a valuable longitudinal study of the progression through in-house, contract for services to alliance models of service delivery. This section firstly describes the water services. Secondly, the legal form of the two alliances and the objectives

which State Corp. sought to achieve when establishing the alliances are described. Thirdly, the environment of regulation and reporting within which the two alliances operate are assembled and examined. Fourthly, the payment arrangements for alliance participants are explained. Finally, key features of the NG Alliance, which commenced operation in 2011, are set out to provide a foundation for later examination of how State Corp. has sought to improve aspects of the early alliances which were found to impact upon the sense of responsibility of the alliances as stewards.

5.4.2.1 The water service

The water service provides services to a metropolitan area which has a population of about 1.5m and 750,000 connected properties. The water service is comprised of assets with a replacement value of “more than \$10b” which are operated and maintained by 400 employees, drawn from State Corp. and the alliances (RFP, 2011, p. 34). Overall expenditure for the two alliances was about \$70m. State Corp. in its state-wide water services role collects \$2b in revenue and about \$9b in net assets (State Corp. AR 2011, p. 66).

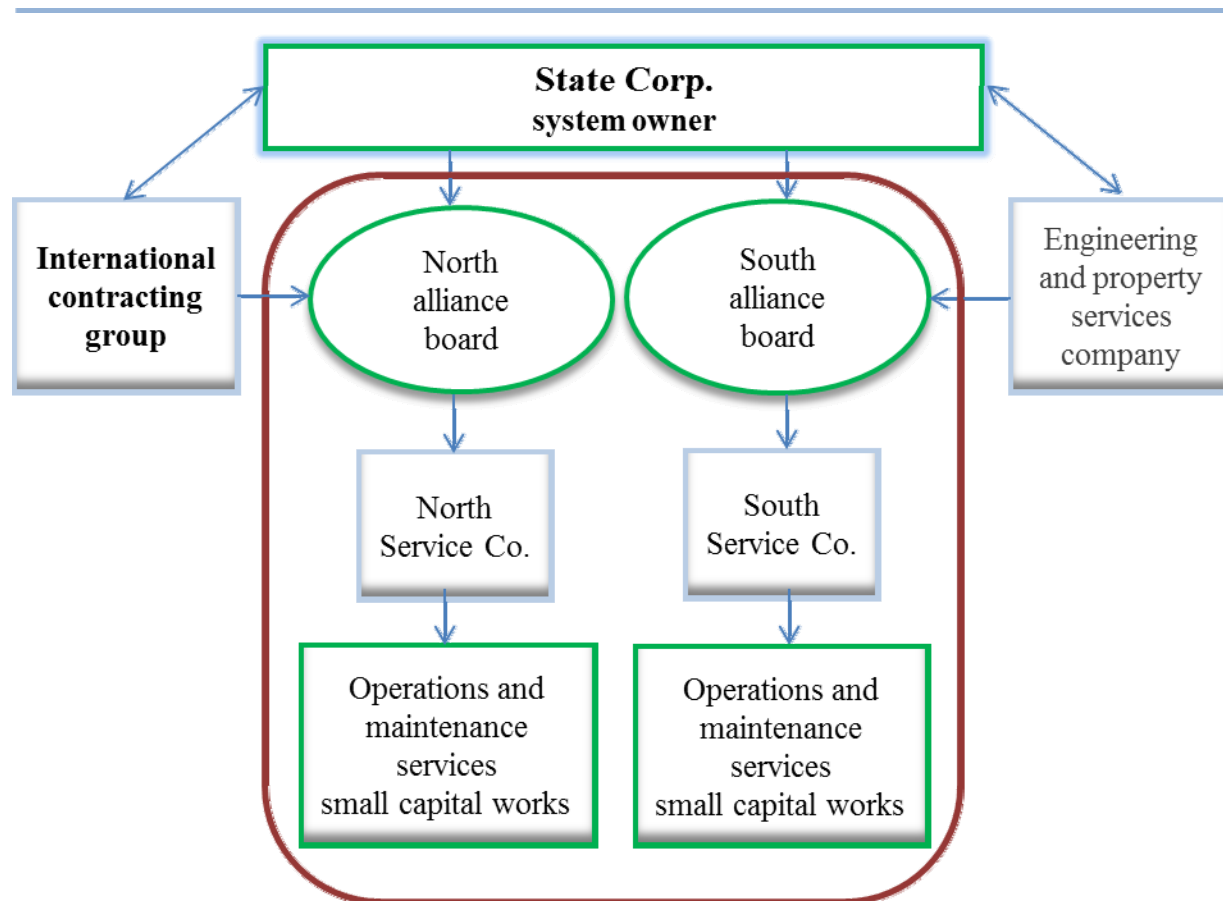
5.4.2.2 Legal form and objectives

The term ‘alliance’ was adopted when the entities were initially formed; however, this description has been shown to be aspirational as some of the key features of an alliance were not put in place or were underdeveloped. The perspectives of State Corp. informants in this regard and the actions taken in 2011 by State Corp. to create a replacement single NG Alliance are examined later in this section. Thus the early alliances are more correctly described as a traditional contract between State Corp. and North (or South) Private Co. for the provision of services as specified in the Alliance Contract and for the creation of a company North (or South) Service Co. by North (or South) Private Co., who each retained ownership of their company. The service company purchased materials, engaged contractors and carried out the works in its own name and not that of State Corp. The service company was the employer of whomever North (or South) Private Co. chose to employ in the name of that company, and the field staff of State Corp. who State Corp. transferred into that alliance when the alliance was first formed. All system assets remained owned by State Corp. and a small number of employees (i.e. two or three) were seconded into each alliance. These arrangements and the NG

Alliance changes from the early alliances make this case study invaluable in understanding the features which contribute to stewardship and sense of responsibility.

The organisational structure is depicted diagrammatically in Figure 5.3.

Figure 5.3 Early alliances



The focus of the case study is the two traditional contracts within the red box. State Corp. is a statutory corporation established pursuant to the powers of water-specific state legislation. North Service Co. was wholly owned by an Australian Stock Exchange-listed large international contracting group. While South Service Co. was wholly owned by an Australian Stock Exchange-listed engineering and property services company.

Governance of each alliance was provided by a separate Alliance Board (AB) comprised of three senior State Corp. representatives and three North (or South) Service Co. representatives, which met at least quarterly. The AB members were generally at general manager level in their own organisations, participating

monthly in the AB for 6–8 hours and being paid only by their respective organisations. The managers of each alliance were employees of North (or South) Private Co. and interfaced with the State Corp. Regional Manager and were members of the metropolitan region management team (Development Bank, 2007). The AB decides upon key works, annual budget and performance targets, with the State Corp.-appointed chairman providing final arbitration. The privately-owned service companies were subject to the scrutiny of the AB and were conducted on an open-book basis. This transparency supports the scheme of payment to the private companies whereby they were paid direct operating and maintenance costs, a management fee, and an annual performance bonus calculated having regard to the service company data.

The objectives of State Corp. in adopting the alliance model were to address the complexity inherent in the day-to-day operation of water systems in metropolitan areas and to alleviate the difficulty and bureaucratic workload entailed in managing O&M contracts on a schedule-of-rates basis (World Bank, 2007). The satisfaction of these objectives is assessed in the section of this thesis which explores *Section 5.4.3.1 Stewardship of infrastructure*.

5.4.2.3 Regulation and reporting

State Corp. and the early alliances operated within a regulatory environment that is very similar to that of other Australian urban water systems: highly regulated with a high level of publicly-available information. The key elements of the environment are as follows.

State Corp. is regulated in four major areas, namely: licensing to operate as a water services provider, licensing to take water, licensing from an environmental perspective and water quality. State Corp. has been issued an operating licence through to 2022 (RFP, 2011) by the economic regulator. This licence sets standards for asset management and service delivery, including the requirement to comply with the *Australian Drinking Water Quality Guidelines 2004*. State Corp. has been issued licences to take water. The environment department has issued licences to State Corp. to operate waste water treatment plants, conditional upon standards as to discharges and odour emissions. The health department sets requirements as to water quality (RFP, 2011).

Regulation of the finances of State Corp. is achieved through legislation which establishes the independence of the entity then makes it subject to Ministerial approval, in particular where matters are of public interest, a major initiative or require expenditure over \$25m. Charges for State Corp. services are decided by the state government which is required to balance the impact of water pricing and the total social, economic and environmental needs of the state.

Reporting to external parties is made by a combination of the reporting to parliament and government required of any government entity and that required of a water services operator plus other reporting which State Corp. makes voluntarily by way of its internet site. An annual report is made to the economic regulator as to compliance with the requirements set in the operating licence (State Corp. AR 2011, p. 49). State Corp. provides quarterly reports and an annual report to the Minister responsible for water (State Corp. AR 2011, p. 49).

State Corp. provides extensive data as to performance against targets for drinking water quality, waste water, water recycling and republishes reports previously made to regulatory bodies, for example water quality reporting to the health department, on the State Corp. internet site.

5.4.2.4 Payment arrangements

Three different forms of payment are made to the North and South Service Companies, the direct operating and maintenance costs, a management fee and an annual performance bonus (Development Bank, 2007, p. 9).

Operating and maintenance costs incurred by the service company (costs of employing alliance staff, materials and contractors) are reimbursed. The management fee covers overheads and profit. It is based on the reimbursed O&M costs and the quantum of this fee was set by the original competitive bidding process (Development Bank, 2006, p. 12). The annual performance bonus is based on a number of factors, including meeting KPI targets, and the degree to which the budget is met or bettered. Bonuses are paid for that year's achievement only, further improvement being required for a bonus to be paid in a subsequent year (Development Bank, 2007, p. 9).

These payments and bonuses are dependent upon extensive reporting as to each expenditure item, performance against KPIs and performance against budget.

This results in a high level of transparency with there being no evidence of a possible information asymmetry favouring either State Corp. or one of the private companies.

5.4.2.5 *Next Generation Alliance*

The case study interviews were conducted in 2011. At that time State Corp. was finalising the selection of the private participant in a single alliance which would carry out the combined roles of the North and South alliances and subsume existing functional units from within State Corp.'s metropolitan operations. As the configuration of the new alliance acknowledges the learnings from the early alliances and alliances in other water systems, and for the purpose of de-identification, this new alliance is denoted as the NG Alliance. The objectives of State Corp. in adopting the NG Alliance model are first examined, followed by setting out the features of the NG Alliance which seek to resolve deficiencies of the early alliances. This thesis does not examine the NG Alliance as a case study itself but rather as a rich source of data to increase the understanding of the early alliances.

The need for State Corp. to form the NG Alliance was earlier signalled by the Development Bank's (2007) observations that the "...alliances reached a point where significant improvements had been made, and diminishing returns occurred....the Alliance Agreement must be flexible enough to accommodate revitalisation through the enlargement of scope, vertical and/or lateral integration of staff and processes, and removal of process impediments" (Development Bank, 2007). In 2011 State Corp. commenced the process of selecting a participant for the alliance. The State Corp. annual report in August 2011 described the NG Alliance as a single, integrated entity which would gain efficiencies and improve performance in the delivery of services. (State Corp. AR 2011, p. 45). The NG Alliance extended the scope of services to include all State Corp. employees and functions in the region, using a single service company, managed by the AB as a single point of accountability, to oversee all the activities (RFP, 2011, p. 31).

New Private Co. was selected and established its own service company (New Service Co.) which took over the role of employer from North (and South) Service Co. Put in its most simple way, the two previously regionally-based alliances have been combined with the asset management function and smaller State Corp. functional groups to form a single alliance covering the combined metropolitan area and being staffed by about 90 employees from State Corp. and about

300 employees from the service company owned by New Private Co. This progress of privatisation was noted by State Corp. informant C5 who said “*Management of services is the role of State Corp., not the doing.*”

The NG Alliance changes by State Corp. provide a body of significant data to aid in the understanding of the effectiveness of the early alliances model of privatisation, and details of the NG Alliance are given in the following sections which set out the findings in respect of the early alliances.

5.4.3 The findings

This section firstly explores whether there was stewardship of the water service by the early alliances, and the nature of stewardship behaviour of the early alliances. Secondly, the evidence as to whether there was a sense of responsibility on the part of the early alliances to State Corp. is assembled and an analysis made of how important that sense of responsibility was to stewardship on the part of the early alliances. Thirdly, the data as to actions to increase the sense of responsibility of the early alliances are assembled and analysed.

5.4.3.1 Stewardship of infrastructure

This research has proceeded on the basis that public values provide a suitable measure of the stewardship of critical infrastructures and in the preceding Case Studies A and B the public values of efficient use of public resources and quality of services provided to customers were found to be the most important to the public. Consideration of the public values in play in respect of the metropolitan water system in Case Study C revealed that those same two values are the most important. Accordingly, this section first examines whether there has been efficient use of public resources. Second, the quality of services provided is examined. Third, the data is analysed to understand the nature of the behaviour of the agent or steward.

5.4.3.1.1 Efficient use of public resources

The efficient use of public resources is measured by comparison against the performance of the system before the early alliances were established, and by comparison against similar water systems. Comparison against performance before the early alliances was made by the Development Bank (2007), which used four measures — activity-based productivity, customer reported water and sewer faults

attended to within the target time, lost time injury frequency rate, and direct customer contact satisfaction — utilising data up to 2004. There had been 18% productivity savings over a nine-year period but, importantly, most of the savings were achieved in the first five years (Development Bank, 2007). Response times were found to have decreased “dramatically” and the Lost Time Injury Frequency Rate improvement was found to be “outstanding” (Development Bank, 2007, p. 16). Direct customer satisfaction surveys revealed 90% of customers were “satisfied” or “very satisfied” (Development Bank, 2007, p. 17). The Development Bank (2006) concluded that “By almost any measure these alliances have been highly successful...” (Development Bank, 2007, p. 2).

Comparison against other systems is made in the annual *National Performance Report: Urban water utilities*. State Corp.’s combined operating costs for water and sewerage per property in comparison with 10 other like-sized systems is shown to be the second lowest cost in 2009–10 and the lowest in 2008–09 (National Water Commission, 2011). Whilst lowest cost alone is not sufficient evidence of effective use of public resources when considered in the context of the achievements reported by the Development Bank (2007) it is reasonable to conclude the early alliances satisfied the public value of efficient use of public resources.

5.4.3.1.2 *Quality of services*

State Corp. reported the highest number of complaints for the three years to 2009–10 when compared with seven like-sized water systems (National Water Commission, 2011). In 2009–10 five of the utilities reported fewer than five complaints per 1,000 properties but State Corp. reported more than 15 complaints per 1,000 properties (National Water Commission, 2011). Whilst not directly conflicting with the 2004 data that “Direct customer satisfaction surveys revealed 90% of customers were “satisfied” or “very satisfied” on which the Development Bank relied (Development Bank, 2007, p. 17), the 2010 comparison with other utilities suggests that State Corp. may now be evidencing an unfavourable trend, or at the least a plateau in State Corp.’s ability to satisfy customers. State Corp. had for the three years to 2009–10 reported a consistent level of unplanned interruptions which is marginally higher than the median for the nine utilities compared, but consistently within the 100- to 140-minute level achieved by seven participant utilities (National Water Commission, 2011). State Corp. had for the three years to 2009–10

consistently reported the second lowest percentage of calls answered within 30 seconds for the eight utilities compared (National Water Commission, 2011).

Further understanding of the quality of services was sought by searching for adverse mention as to quality of services in the archival and informant studies. The archival study found no instances; however, the informant study elicited from comments from the State Corp. informants C1 and C2 that unsatisfactory quality of service does happen, attributing this to the alliances focusing on the KPIs to achieve bonus payments rather than providing a sound quality of service. State Corp. informant C1 said “...they [the alliances] focus on transactional, individual items, not looking across [the system]...[they] seek to satisfy the KPI rather than [satisfy the] reason for the KPI.” State Corp. informant C2 said “...you get inappropriate drivers when you focus on KPIs and dollars.” When asked for an example informant C2 said:

One of our KPIs under our operating licence is responsiveness to customers...we record how many meters we install within fourteen days, and as soon as somebody books time to do a work order, the clock stops because you’ve started the job. ..It might be another twenty days before you get to the site, but you have passed the KPI...We had a customer who paid to have their water service relocated. Now that’s not a KPI under the contract. The customer was told by one of the alliances, that’s not a KPI...so we will do it when we get around to it.

The question then is whether State Corp. has achieved stewardship of the water service. The conclusion of the Development Bank (2007) is that State Corp. through the early alliances has achieved efficient use of public monies and much improved quality of services when compared with the arrangements in place before the alliances commenced. However, that conclusion was formed in 2007 based in part on 2004 data. The State Corp. 2011 RFP document for the NG Alliance acknowledged deficiencies in the early alliances saying that the arrangements applying to the “early alliances...have not always encouraged a strong co-operative focus on business improvement” and that there are a “...lack of alignment of goals and objectives...[and] collective responsibility for outcomes...”. This ominous terminology in a public document may signal that State Corp. had formed the view that it was not achieving an appropriate outcome from the early alliances. This concern, when brought together with the mildly adverse archival document findings

and the advice from State Corp. informants CI and C2 that unsatisfactory quality of service does happen, would reasonably lead to the conclusion that the principal (State Corp.) formed the opinion that the early alliances were not achieving stewardship of the water service. That conclusion is reinforced by the State Corp. action of terminating the use of the early alliance form of relationship. It was concluded that the early alliances did not achieve stewardship of the water service.

5.4.3.1.3 Stewardship behaviour

On the basis that stewardship of the water service was not achieved, this thesis proceeds to explore the behaviour of the agent/steward and whether there was a causal link between that behaviour and there not being stewardship.

The literature, archival and informant interview studies revealed no instance of there not being contractual compliance. However, contractual compliance was found to have a negative connotation for State Corp. informants. As discussed in the preceding sub-section regarding quality of services, informants CI and C2 attributed unsatisfactory quality of service to the alliances focusing on KPIs to achieve bonus payments rather than providing a sound quality of service. State Corp. informant C2 conceptualised this issue as ‘inappropriate drivers’ but it is also literal contractual compliance with the alliance acting in its own interests without a sense of responsibility to the principal. In the example given by State Corp. informant C2, where the KPI was satisfied by booking time to the customer’s job as distinct from satisfying the customer’s needs, the agent is clearly acting against the interests of the principal.

Thus the performance of the early alliances at the higher level of behaviour, that of acting in the interests of the principal, becomes highly unlikely. The possibility that the early alliances have acted against the interests of the principal was increased by State Corp. informant C1 who clearly understood the concept of a contractor acting in the interests of the principal, recounting the response of the Mechanical and Electrical (M&E) alliance (not the subject of this case study) to a death caused by a steel mesh platform collapsing under the weight of the employee. The State Corp. Board required that each of the thousands of platforms be assessed, faults identified and made safe. Informant C1 said the “...*M&E Alliance took the attitude that there were no barriers, no issues of priorities and did the work on time. In contrast the O&M alliances...saw the work as a lesser priority, needed a work*

order.” In these examples the data revealed a belief on the part of the State Corp. informants that at least one of the early alliances had not acted in the interests of State Corp. (the principal).

Yet, in contrast, informant C1 went on to say that “...*in the time of incidents (call outs, burst water mains) the alliances do better than contract [requirements].*” North Service Co. informant C8 when asked about going above and beyond the contract said “...*if something needs to be done it is going to get done and if they [State Corp.] say what about the cost, we say well we will sort that out later.*”

These findings from the informant study were corroborated in the State Corp. RFP (2011, p. 31) which commented “... the current arrangements do not always provide the best opportunity for the achievement of overall business objectives: Measures taken by the O&M alliances to achieve cost reduction sometimes resulted in increased cost elsewhere in State Corp. and the current arrangements have not always encouraged a strong cooperative focus on business improvement”, it also went on to identify a lack of alignment of goals and objectives and a lack of collective responsibility for outcomes as ‘defects’ in the ‘early alliance’ arrangements. These findings were consistent with the conclusion, in *Section 5.4.3.1 Stewardship of infrastructure*, that the early alliances had not achieved stewardship of the water service. The archival and informant studies were not constructed to reveal whether this lower level of performance was limited to only one of the early alliances or applied to both.

The next and final level of performance to be explored is whether the early alliances have acted in the interests of the principal to the extent of performing exceptional acts that might have amounted to the alliance doing something to its own detriment. There was no evidence of either alliance doing anything extraordinary, which in the commercial context of privatised water services would translate to financial or reputational costs. State Corp. informants consistently adopted the perspective that the relationship was commercial and that there was no expectation that the early alliances act against their own interests in a significant way.

Bringing the data together for the early alliances it was found that stewardship of the water service had not been achieved and that the nature of behaviour of the North and South alliances was that of contractual compliance, and

not acting in the interests of State Corp. (the principal). The question arises as to whether there is a causal link between not acting in the interests of the principal and there not being stewardship of the service. A review of the data from the two State Corp. informants revealed that their view was that the acting with self-interest was linked to there not being stewardship of the service. The 2010 NG Alliance RFP data revealed that State Corp. had formed the view that it was not achieving an appropriate outcome from the early alliances. Whilst the data does not specifically state that stewardship was not being achieved the fact that State Corp. abandoned the 'early alliance' form of contractual relationship suggests that State Corp. saw a very strong link between the behaviour of the early alliances and an unacceptable outcome. It is concluded that the case study demonstrated a strong causal link between acting with self-interest (or against the interests of the principal) and stewardship of the service not being achieved.

In summary, it was found that the behaviour of the early alliances was contractual compliance but that a significant body of evidence showed that State Corp. was of the opinion that the early alliances were not acting in the interests of State Corp. No example of the alliances performing an extraordinary act to the benefit of the principal and acting against their own interests was found, nor was there an expectation by State Corp. that the early alliances act against their own interests as the relationship was commercial.

5.4.3.2 *Sense of responsibility*

This section assembles evidence as to whether there was a sense of responsibility on the part of the early alliances to State Corp. and then analyses how important that sense of responsibility was to the achievement (or not) of stewardship behaviour.

Sense of responsibility was a term which resonated with private company informants. The two private participant informants from the North alliance demonstrated a straightforward sense of responsibility to the government entity. South Service Co. informant C6 said:

...I do think that myself and South Service Co. we really do take responsibility, we almost take more responsibility than State Corp. itself. They have outsourced this for such a long time that they have no expertise in doing it at all anymore...they don't know if they are getting a good service or a bad service...this inbuilt culture

[in State Corp.] where you really think that the contractors are ripping you off all the time....

Further, South Service Co. informant C7 said:

...South Service Co. is responsible in spite of all the goading to be irresponsible from State Corp. I think State Corp. if they had their way, we would just spend less money, that's the big driver ... but at the same time make sure the assets don't degenerate and we do all these things. I do think that we are responsible managers of State Corp's asset and their customers, but as I say it is almost in spite of State Corp.

When asked what engendered this sense of responsibility in the absence of a reciprocating spirit from State Corp. South Service Co. informant C6 revealed an immensely strong personal sense of responsibility for providing the community's water service (or to the water industry) as distinct from responsibility to State Corp. This issue goes right to the point of how important it is that sense of responsibility to the principal be present for there to be stewardship. Informant C6 had been put a question as to whether there was a tension between sense of responsibility to State Corp. and sense of responsibility to his employer South Service Co. Informant C6 said:

South Private Co. has very little to do with us...so my own sense of responsibility comes from my career in water. I do have State Corp.'s interests at heart...You are talking to someone who is a career water person whose sole purpose is to provide this service. We live and breathe it almost... "I read some of your questions here: 'What do people from State Corp. do to engender a sense of responsibility?' They don't really have to in this case...they don't do anything, we are the dirty contractor, that is how the vast majority of State Corp. treat us....

It would seem then that there is another form of sense of responsibility in play with at least one of the two South Service Co. informants: a sense of responsibility directed to the water sector and the community. This other sense of responsibility offers the possibility of being a criterion or factor which complements and reinforces sense of responsibility to the principal.

The data from the government entity informants was interrogated for evidence as to whether the steward private companies acted with a sense of responsibility. State Corp. informant C1 explained that the alliances approach

matters at a transaction level, focusing on individual items and do not look to the impact on the whole system saying “...[they] seek to satisfy the KPI rather than [satisfy the] reason for the KPI.” This focus on KPIs resulting in inappropriate outcomes for the principal was reiterated by State Corp. informant C2. Put simply, there was negligible positive evidence to support the claim of the private company informants that there was sense of responsibility to the principal. This low level of sense of responsibility (and stewardship) may have been acknowledged by State Corp. The RFP document for the NG Alliance says:

... the current arrangements have not always encouraged a strong cooperative focus on business improvement. It was recognised that these issues...largely come about due to some of the fundamental principles and features of successful alliances not being reflected in the structure and understanding of, or behaviour within, the current arrangements. Examples are lack of alignment of goals and objectives, collective responsibility for outcomes and integrated management of resources. (RFP, 2011, p.31)

Drawing these findings together, whilst there was some evidence of the early alliances having a sense of responsibility, the evidence from the 2011 NG Alliance RFP, the evidence of the State Corp. informants of the early alliances focus on the KPIs and not the maintenance of the water service and at least one the two South Private Co. informants directing their sense of responsibility to the water sector and the community it is reasonable to conclude that, on balance, there was not an adequate sense of responsibility to the principal.

The second focus of this sense of responsibility research is to understand how important sense of responsibility was (or not) to there being stewardship behaviour. In this case study the finding was that there was only limited stewardship-like behaviour and that the sense of responsibility was judged by the principal to be not adequate to the role. The issue then is whether this inadequate sense of responsibility had a causal link to there not being stewardship behaviour on the part of the early alliances. That such a conclusion was the case would ideally require evidence that the inadequate sense of responsibility was the antecedent of the early alliances acting in their own interests. That clear evidence was not available. However, evidence was available that an inadequate sense of responsibility did accompany the early alliances not acting in the interests of State Corp. Accordingly,

on the balance of probabilities it is concluded that for the early alliances there was a causal link between there not being an adequate sense of responsibility and there not being stewardship behaviour. It would follow then that sense of responsibility is shown to be important to stewardship behaviour.

Indication that State Corp. believes that there is a stronger causal link might be found in the actions of State Corp. in replacing the early alliance contractual relationship. The RFP for the NG Alliance referenced earlier in this section shows that State Corp. has been prepared to say that the arrangements applying to the early alliances “...have not always encouraged a strong co-operative focus on business improvement” and that there is a “...lack of alignment of goals and objectives...[and] collective responsibility for outcomes ...” (RFP, 2011 p. 31). These terms can reasonably be concluded to have the meaning of there not being a sense of responsibility and that it is an important requirement for State Corp. that the agent possess this sense of responsibility in the stewardship of the water service — so important in fact that State Corp. has terminated the use of the ‘early alliance’ form of relationship. State Corp. clearly wants to contract with an agent who exemplifies stewardship behaviour by delivering “...further and ongoing business improvement in a way that maintains high standards of service within budgetary constraints” (RFP, 2011, p. 31). Thus we are given the insight that State Corp. believes that there is a link between sense of responsibility and an improved level of stewardship behaviour, a link so strong or possibly essential that State Corp. has configured the replacement alliance with features that emphasise that sense of responsibility. The RFP for the replacement alliance specified that the suitability of proposals would be assessed against, amongst other things, the commitment of nominated key representatives. State Corp. informant C3 had used this term when describing what State Corp. was looking for in the private participant for the NG Alliance as “...*the five c’s that we look for, culture and commitment, ... capability, capacity and their commercial offer...*”. Hernandez (2012) has utilised the term commitment in the same context as sense of responsibility. Thus if commitment is a requirement by the government entity both at the organisational level and at the individual level then it is not a large step to characterise an organisation who evidences commitment as one which evidences sense of responsibility. Thus the government entity has publicly required that the private participant demonstrate a

sense of responsibility. It would then seem, beyond a reasonable doubt, that for the government entity sense of responsibility to the principal is essential.

In summary, whilst there was some evidence of the early alliances having a sense of responsibility the evidence from the 2011 NG Alliance RFP and the two South Private Co. informants directing their sense of responsibility to the water industry and to providing water to the community when brought together lead to the conclusion that there was not a sense of responsibility to the principal. It was found that there was a strong possibility that the absence of a sense of responsibility to the principal did have a causal link to there not being stewardship behaviour of the system. It was found that the inadequate sense of responsibility was a key reason State Corp. replaced the early alliance relationship signalling that for State Corp. it is so highly important to the stewardship behaviour required of the agent that there be sense of responsibility that State Corp. considers that attribute on the part of the agent as essential. In configuring the replacement contractual relationship State Corp. has given extensive consideration to the features which will maximise the performance with regard to sense of responsibility-related issues, such as “...lack of alignment of goals and objectives...[and] collective responsibility for outcomes ...” (RFP, 2011, p. 31). These are explored in the following section.

5.4.3.3 Actions to increase sense of responsibility

The early alliances case study is distinguished by a significant body of findings as to actions which impact negatively on sense of responsibility and these have been included along with the findings as to actions which were found to impact positively on sense of responsibility. Those findings formed into the following themes which are explored in following sections:

- ensuring suitable participants;
- branding of alliances; and
- incentives to private participants

5.4.3.3.1 Ensuring suitable participants

When sense of responsibility on the part of the steward was unpacked the suitability of the government entity was raised by both State Corp. and Private Co. informants. This section first examines aspects of the private participants which were put forward as impacting on the steward having a sense of responsibility to the

principal (State Corp.). Evidence as to the suitability of the government entity (State Corp.) and its employees to support or increase the steward's sense of responsibility is then examined.

5.4.3.3.1.1 Suitability of private participants

Key aspects of the suitability of the private sector participants and their employees were addressed earlier in this section of the thesis which explored the extent to which the early alliances (the stewards) acted in the interests of State Corp. (the principal) and the importance of sense of responsibility. This sub-section of the thesis firstly restates those briefly from the perspective of the shortcomings which State Corp. identified, and then considers the data in relation to other features of the early alliances' private participants which impacted on their acting with a sense of responsibility to the principal (State Corp.).

State Corp., in the NG Alliance RFP, identified a "lack of alignment of goals and objectives" and a lack of "collective responsibility for outcomes" (RFP, 2011, p. 31) as the key deficiencies of the early alliances. By way of the RFP, State Corp. established evaluation criteria against which those responding to the RFP would be measured including the record of the proposer of providing similar services, and the culture and alignment of the objectives, values, visions etc. of the proposer's business with those of State Corp. In turn the proposer was required to specify the names of the individual key staff members nominated to work in the NG Alliance with the RFP establishing criteria of competency, commitment and culture against which those individuals will be measured (RFP, 2011, p. 56). The State Corp. RFP is an invaluable tool for those seeking to develop the criteria required of private participants in long-term alliance contracts.

Another feature of the private participants which impacted on the sense of responsibility was the belief in alliance philosophies. State Corp. informant C3 said *"You have to have the corporate non-owner participant people believe that this is where they want to be. This is about a long-term relationship of sharing values, sharing goals..."*. Several of the State Corp. informants recounted State Corp. experience with alliances in construction projects, describing the contribution of private participants as being invariably highly suitable. State Corp. informant C3 summed up what State Corp. is looking for in the private participant for the NG

Alliance as “...the five c’s that we look for, culture and commitment...capability, capacity and their commercial offer...”.

5.4.3.3.1.2 Suitability of State Corp.

The issues as to suitability settled into two themes: State Corp. and its employees not recognising that the privatised operations were legitimate operations, and the need for the government organisation to be structured and resourced to capably interface with the privatised operations. This sub-section first considers those issues and then considers how State Corp. sought to address them through the NG Alliance.

State Corp. not recognising the legitimacy of the privatised operations

State Corp. and its employees not recognising that the privatised activities were legitimate operations of the government entity was offered by both government entity informants and private company informants as impacting adversely on the sense of responsibility on the part of the stewards, the two early alliances.

South Private Co. informant C7 when asked if State Corp. fostered a sense of responsibility said “*I think State Corp. is so bound up in bureaucracies and targets...I don’t get a sense that people take a real interest in the whole business...they lose sight of the big goal. They seem to forget they’ve got custodianship of an entire water system and waste water system ...*”. South Private Co. informant C6 said “*...I interact with an awful lot of other people, and they all tend to say well we are State Corp, you are the contractor, we are one step higher up the ladder than you guys. ...we react very well to that and we do our best for State Corp...We are the dirty contractor, that is what [sic] the vast majority of the State Corp. treat us...*”. North Private Co. informant C9 explained the demanding nature of many of the State Corp. employees saying “*State Corp. people do not understand that requests for help go in both directions. Not master–slave. It should all be reciprocal...*”. South Private Co. informant C6 took a less personalised, more system-based perspective saying “*... I don’t think a lot of people [in State Corp.] know ... [State Corp.] did this because we thought this other organisation [the alliance] could add value, do this part of our business better.*” In summary, the private participant informants believe that rather than fostering a sense of responsibility State Corp. has adversely affected the sense of responsibility of the

steward early alliances by not establishing within the State Corp. organisation the understanding and belief that the early alliance privatisation was a legitimate part of State Corp.'s operations.

Capability to interface with the privatised operations

During questioning of informants as to what might cause this lack of understanding of their own organisation, including its operations carried out by the early alliances, South Private Co. informant C6 said:

They [State Corp.] have outsourced this for such a long time that they have no expertise in doing it at all anymore ... they don't know if they are getting a good service or a bad service and you've got this inbuilt culture where they really think that the contractors are ripping them off all the time...My view is that they are not very good at managing contracts...

When asked for an example of the effect of State Corp. employees not being competent, South Private Co. informant C6 said “...there are seven different places in State Corp. from which the work comes to South Alliance and these come together in the Manager's position [his own]. We are measured to the nth degree and there are very specific requests which are contradictory so far as priorities.”

A dimension within this issue of State Corp. not having the capability to adequately manage the early alliances, which were in fact traditional contracts, was the State Corp. staff not having the knowledge of how to operate the system. State Corp. informant C3 said that since the 1995 privatisation:

...there has been very little participation within the alliances by State Corp. people which is maybe not historically the concept that alliances were designed to be...even though they operate with all the principles of alliancing they don't actually have large numbers of owner's people embedded in the alliance. We have had one or two people as against several hundred of non-owner participant's people within the alliance.

South Private Co. informant C7 said:

...they built the alliances to deliver families of jobs...these alliances doing the O&M aren't really alliances because there are not people from State Corp. embedded in them...they want people embedded this time...So I think they've recognised that as one of the ways forward and a way of developing people.

State Corp.'s rectification through the NG Alliance

The common theme to these issues is that of the perceived inappropriateness of the State Corp. people for the role of interfacing with private operations. For clarity, these State Corp. people are those with whom the alliance people interface, not those who were in the early alliances nor the increased number who are in the NG Alliance. This distinction has been acknowledged by State Corp. who in a presentation regarding the then upcoming RFP process asserted that the “Focus of our change efforts [was on] ... finding the right partner, ...getting people involved ready ... getting the rest of State Corp. ready” (State Corp. Conference slide presentation Sept 2010).

Indeed State Corp. has reconfigured the early alliances into the NG Alliance contributing a significant number of State Corp. employees (i.e. 90 State Corp.) as against 300 from the combined service Co.s (2011 RFP, p. 44). The objectives have been “A capable, motivated workforce with robust succession arrangements ... and State Corp. ... retaining the skills to be an ‘intelligent manager’ of the services...” (RFP, 2011, RFP, p. 31). Placing these additional employees within the alliance is a major reconfiguration of the alliance which will address the issues which were found to impact negatively on the sense of responsibility of the steward (the alliance).

In respect of the State Corp. employees who will remain outside the NG Alliance it would appear that State Corp. has configured the NG Alliance with an “...increased scope...which minimises the interfaces between the NG Alliance and State Corp.” (2011 RFP, p. 42.). The scope of services includes all State Corp. functions in the metropolitan region and that of the previous two early alliances with the key additional functions being Operational Asset Management, regional customer service office and supporting business services (2011 RFP, p. 36). This increase of scope to draw into the alliance those State Corp. employees who have an impact upon the success of the alliance resonates with an observation of State Corp. informant C3 who, when differentiating between traditional contractual relationships and alliances, related that “*The contractor wants a way for understanding the owner’s requirements... If the owner is outside [The Alliance] then the owner has no skin in the game. If it is the regular contract where the contractor is required to ‘come in’ then there is mistrust.*” Interestingly, North Private Co. informant C8 used

the same vernacular saying that “...the big plus from the NG Alliance is the asset management guys coming into the alliance. ...there would be a bit of a feeling that they don’t have enough skin in the game, [if you asked] ... the guys who are having to return to the same street and there have been three bursts there in the last six months. ... they’ve [State Corp. asset management] got issues with spending the capital on replacing that section of pipe.” The other side of the coin was put by State Corp. informant C5 who likened the current early alliances to traditional contracts saying “...you get things done if you put additional monies on the table. If you have water leaks you pay a bonus for quick response. The new alliance will expect that these are part of business as usual...it will address the responsibility to maintain the system so the leaks are reduced and the cost is in the overall alliance cost.”

In summary, the findings were that the early alliances did not have several of the key features now acknowledged as the essence of alliances and were in fact traditional contracts. These traditional contracts were characterised by behaviour on the part of the State Corp. employees outside the alliances which negatively impacted upon the sense of responsibility and motivation of the alliances to act in the interests of the principal. State Corp. identified those adversely impacting issues and configured the replacement NG Alliance in accordance with principles of modern alliance design, in particular including a significant number of the principal’s employees within the alliance workforce and encompassing additional functions for the purpose of minimising the interfaces between the alliance and the government entity, the principal.

5.4.3.3.2 Branding of the alliances

Branding the alliances differently from the State Corp. brand and the perceived lesser importance of the alliance brands emerged as an action which has had a negative impact on the sense of responsibility on the part of the alliances. South Private Co. informant C6 when describing the discrimination associated with office accommodation said “...it is a condition of the contract that the State Corp. logo is bigger and comes first.” Yet that informant said “...all the people who work for us...wear uniforms and wear a badge for State Corp., they drive State Corp. vehicles, they interact with customers and say ‘we are from State Corp...’”. Informant C6 put forward this issue of subjugation of the brand of his alliance as

indicative of the attitude adopted by State Corp. when responding to questions as to what State Corp. does to promote sense of responsibility. There was no archival data available as to the rationale for the 1995 decision to create and publicly display alliance brand names rather than conduct this O&M business under the principal's brand name.

This unfavourable differentiation between State Corp. and the early alliances was clearly apparent in the office and depot accommodation allocated to the alliances. The accommodation for each alliance was located in larger, acreage compounds shared with the respective State Corp. regional operations. The accommodation occupied by State Corp. is 10 to 15 years old and built and maintained to a higher standard than that occupied by the alliances. The alliance accommodation is 20–30 years old with the interior being of that age, worn and not maintained. South Private Co. informant C6 said South Service Co. was the “*poor cousin*” and highlighted the noticeably better carpet and audio-visual equipment in the room in which we met, saying that that was because State Corp. employees also used the meeting room. State Corp. is responsible for premises maintenance. The accommodation is sub-standard by any Australian standard, private or public sectors. As well as the unfavourable comparison between alliance accommodation and State Corp. accommodation on site, the State Corp. headquarters presented an even greater disparity being a purpose built, spacious, average-to-superior quality of commercial fit-out with generous common spaces and internal café. The disadvantage of the alliance employees when compared to State Corp. employees was a distinct source of dissatisfaction which appeared to alienate the alliance informants from State Corp. raising the possibility that there was a negative effect upon the sense of responsibility on the part of the alliance employees.

The NG Alliance RFP (2011, p. 35) specifies “Existing operations-specific facilities will be retained and the management and support groups of the NG Alliance will be co-located at the State Corp. Southern Suburbs Regional Office.” It is this regional office, being of a distinctly better standard, which attracted the criticism of informant C6. This common location may remove a source of perceived disadvantage.

In summary, it is concluded that the conscious decision by State Corp. to allow two ‘early alliance’ brands but to require that the State Corp. brand be also

displayed, larger or more prominently, created a negative perception on the part of alliance participants. There is the possibility that creation of two identities by State Corp. and subjugation of brands has diminished the sense of responsibility to State Corp. Intriguingly, there was no evidence of advantage being gained by the alliances trading under names other than State Corp. and in fact alliance employees naturally gravitate to identifying themselves to customers as being from State Corp. It may be the case that the concept of the alliance trading under a brand different from that of State Corp. no longer has utility. In respect of the disadvantage of the alliances as to accommodation when compared with that of State Corp. it is concluded that such disparity has undermined a sense of responsibility and fails to take the opportunity to build a sense of responsibility by providing similar or shared accommodation. It would appear that State Corp. has addressed the issue of disparity of accommodation by providing common accommodation for the NG Alliance members. There is no data available as to whether the NG Alliance will trade under its own brand or that of State Corp.

5.4.3.3.3 Incentives to private participants

Direct incentives were seen by the informants as strongly impacting on the sense of responsibility of the alliance participants. These incentives are: the relatively long term of the alliance contract, the financial incentive arrangements, and the additional work which can be obtained.

The term of the contracts offered by State Corp. for O&M alliances is an example of the evolving sophistication of the State Corp. approach to alliancing and the innovation achieved in the NG Alliance. The early alliances were offered an initial five-year term which was extended for a further seven years, followed by a re-bid process which delivered new alliances for a five-year term which was extended to 2011. The NG Alliance commenced in 2011 for an initial term of five years, with rolling extensions possible dependent upon performance against set criteria for the first five years up to a total of 10 years. A further five-year extension is also available at the discretion of State Corp, amounting to a total of 15 years (RFP, 2011, p. 63).

These relatively long-term contracts were referenced by State Corp. informant C3 as being a way of increasing the sense of responsibility, when

compared to the shorter-term contracts typical for traditional contracts for schedule of rates O&M work. State Corp. informant C3 said:

For the contractors the alliances are a blue chip base because of the long-term nature of alliances. If a company has five or more alliances it starts to be seen by shareholders as a stable client base. This is viewed disproportionately favourably when compared with the actual commercial rate [of return from the alliance]...because the stability allows the company to pay its bills and plan and act from a long-term perspective.

Another State Corp. informant C4 reinforced that perspective saying “...most are about ten years and [plus] renewal so if you are a company and have an overhead, you need a base load to keep that overhead and to be available to bid on the opportunities...Knowing there might be an opportunity to build something else.” However, it should be recorded that the private company informants did not offer the term of the contract, nor the prospect of extension of a contract, as an incentive to act with a sense of responsibility. The importance of the contract term may have been diminished as at the time of interviews South Private Co. had made known its decision to not tender for the NG Alliance and North Private Co. was not then experiencing any benefit as it was required to compete in the NG Alliance tender process.

The financial incentives to the private participants in the early alliances were set out in *Section 5.4.2.4 Payment arrangements*. The four private company informants at no time suggested that the financial payment arrangements were an incentive for increased sense of responsibility. One State Corp. informant, C1, believed the link between the satisfaction of KPI targets and the annual bonus caused a perverse result as the alliances would “... seek to satisfy the KPI rather than [satisfy the] reason for the KPI.” A further criticism of the early alliance payments was made by North Private Co. informant C8 who said that “...we get paid a fixed management fee so it doesn’t matter if we do more or less work ... in dollar terms it is a fixed amount.” Yet the RFP reveals “...the margin for the year will be a fixed dollar sum, fixed at the commencement of each year” (2011, RFP, p. 65) suggesting that that fixed management fee, criticised by North Private Co. informant C8, will continue. In addition, a risk/reward scheme whereby the under-run/over-run of the annual budget is shared equally between State Corp. and the NG private participant

is in place. It is this sharing of the savings which was seen by State Corp. informant C3 as:

...the opportunity for abnormally good outcomes ... because typically they are getting as a minimum, all their direct costs paid regardless of whether they absolutely screw up. They are normally going to get their margin or they may have to sacrifice part of the margin, because normally the margin is risk/reward. Then if you are able to bring it in under target-costs...you share in more money...all of a sudden you can have quite significantly better than normal business outcomes...

The risk to the private participant is capped at the amount of the margin for that year. In addition there is now a business innovation scheme whereby the private participant can propose innovations and be paid an innovation payment approved at the total discretion of the alliance board.

Additional work has not to date been made available to the private participants in the early alliances. Rather, the topic was raised by State Corp. informants as both a reason why private companies sought to participate in alliances and an incentive that the government entity (State Corp.) can offer to prospective or existing private participants in alliances. In the State Corp. context there has not been, nor is there any intent to, have an O&M alliance carry out work for third parties such as other water systems. Accordingly the only possibility for a private participant in an alliance with State Corp. is that they will obtain more of the day-to-day work which is currently performed by State Corp. or obtain more of the capital work which is currently put to market. State Corp. informant C4 when explaining how the O&M alliance is attractive to construction companies said that such contracts cover the company's overheads and allow the company to *"...wait for the opportunity. Knowing us, there might be the opportunity to build something else [for State Corp.]. They [State Corp.] want the comfort to know that you can build it."* The extent of the available, additional day-to-day work may be limited as the NG Alliance has encompassed functions previously carried out within State Corp. for the metropolitan region, most notably the Operational Asset Management unit. The early alliances had performed a limited amount of capital works, being allocated some of those which were up to a value of \$1m, with North Private Co. informant C8 advising that the capacity of the alliance to do such capital works was limited and that there was no strategy in play for the North Alliance to seek out such additional

work. The 2011 RFP specifies the scope of the alliance as “...project management and delivery of assigned minor capital projects...” (RFP, 2011, p. 34). It would appear that State Corp. has not sought to enhance the attractiveness of participation in the early alliances or NG Alliance by offering the possibility of additional capital work. This would appear to be a lost opportunity to introduce an incentive utilised by other similar water utilities, notwithstanding State Corp. having adopted other incentives modelled by those other water utilities. Whilst not a major focus of this research, further detailed investigation of this aspect of the NG Alliance would be highly likely to be of interest to scholars seeking to understand the nuances of the variations to the alliance model.

5.4.4 Significance of findings

This case study, providing findings that stewardship of the service was not achieved and that the sense of responsibility was inadequate, provided a rich opportunity for later comparison against the findings of the case studies where system stewardship and sense of responsibility were found. In addition the relatively long term of experience (about 15 years) with the early alliance model and the subsequent reform effected through the NG Alliance changes, described in the publicly-available Development Bank (2007, 2011) and RFP (2011) documents, resulted in a high level of confidence in the data gathered. The most important findings from the early alliance case study are:

- That the early alliance model, whilst being denoted with the term ‘alliance’, was in fact a traditional contract rather than an alliance.
- That there was extensive sharing of information resulting in there being no evidence of information asymmetry favouring any party.
- That the early alliances did not achieve stewardship of the water service.
- That the behaviour of the alliances was that of contractual compliance but not acting in the interests of the principal.
- That there were ongoing areas where the early alliances acted against the interests of State Corp.

- That the case study demonstrated a strong causal link between acting with self-interest (or against the interests of the principal) and stewardship of the service not being achieved.
- That there was not an adequate sense of responsibility to the principal.
- That it was probable that the inadequate sense of responsibility did have a causal link to there not being stewardship behaviour.
- That State Corp., by replacing the early alliance relationship, indicated that the principal considered sense of responsibility on the part of the steward to be essential.
- That there was another form of sense of responsibility in play with at least one of the two South Private Co. informants indicating a sense of responsibility directed to the water industry and the community. As this other sense of responsibility was also found to be in play in the Joint Venture case study there is the possibility that this factor complements and reinforces sense of responsibility to the principal.

The reform of the early alliances achieved through the NG Alliance provided a highly valuable critique (as owner) of the effectiveness of the early alliance form of privatisation, essentially the traditional management contract form. This critique allowed understanding of the factors and issues which diminished the sense of responsibility that the alliances brought to the relationship. Key negative factors and issues were State Corp. and its staff not recognising the legitimacy of the privatised operations and State Corp. not having the capability to manage the contract and operate the system. State Corp. addressed those negative factors principally by expanding the scope of the new single NG Alliance to include many of its own staff who had previously interfaced with the early alliances. This allowed the adoption of the modern alliance principle of all parties committing resources and being involved and no one party being subservient to the other, as is the case with the management contract.

Other decisions of the principal had a negative impact on sense of responsibility. The State Corp. decision to have each early alliance operate under its own new brand but to subjugate those brands to the State Corp. brand, as well as the decision to provide accommodation to the early alliances which was inferior to that

provided to State Corp. staff on the same site was found to diminish the sense of responsibility.

In respect of incentives to the early alliances to act with a sense of responsibility it was found that incentives such as relatively long-term contracts with extensions, and performance-based payments whilst in operation were not front-of-mind with the informants, perhaps reflecting the imminent re-tendering of the work by way of the NG Alliance.

In summary, seen from another perspective, State Corp. in its configuration and management of the early alliances had not integrated the activities of the early alliances with those of State Corp. In addition State Corp. was found to have not demonstrated an understanding of actions that could be taken within the early alliances contractual relationship to increase sense of responsibility of the early alliances. The implications of this finding are unpacked using Agency and Stewardship theories in *Chapter 6: Discussion*. However, State Corp. was found to have identified many of the deficiencies in recent years and implemented structural changes to adopt a model similar to The Alliance model examined in Case Study A — a model which has achieved strong stewardship of a water service.

5.5 CASE STUDY D

5.5.1 Introduction

This case study encompasses two near-identical long-term contractual relationships, one between the government water entity, Metropolis Water Corp. (Metropolis) and International Utilities Company for the construction, ownership and operation of a very large water filtration plant, and the other between Metropolis and Global Utilities and Transportation Company for the same outcomes in respect of two smaller plants. The three water filtration plants together treat virtually all of the drinking water for a large metropolitan area with Metropolis itself owning and operating a further six filtration plants. This BOOT form of concession was chosen as a case study because the private company has ownership of the critical infrastructure; that is, the plant which manufactures safe drinking water. This case study allows the opportunity to understand the operation of stewardship in a model where government has elected to not retain ownership of the critical infrastructure. Examining both contractual relationships provided a very rich source of secondary

and primary data and provided the opportunity to compare and verify data. A further attraction of the water filtration plant BOOT case study was a series of contamination events involving the drinking water supplied by the large plant which led to public examination of the conduct of the principal and steward and the stewardship of the most fundamental element of a water service: safe drinking water. This public examination has provided a substantial body of highly relevant public data, which together with the literature and data obtained through the archival and informant studies established these two BOOT contractual relationships as a case study suitable for exploring the operation of stewardship in the context of privatisation.

The following sections of this thesis firstly describe the key features of the two BOOTs, including the water contamination events, to provide a foundation for the subsequent development of the findings from this case study. Secondly, the findings are assembled in a structure based on the areas targeted by the three research questions: stewardship behaviour, sense of responsibility and actions to increase sense of responsibility. Thirdly, the key findings are probed to understand the possible significance of the findings from this BOOT case study.

5.5.2 Key features of the BOOTs

Each of the plants has no role other than the manufacture of treated drinking water. Raw water as one input and treated water as the output remain owned by Metropolis. Each contract requires collaborative research between Metropolis and the respective private company which keeps the two parties abreast of technology and provides that they perform on-site research and exchange findings (Mumford, 1996; Implementation Review, 2008). This section firstly describes the water service to provide a context for the findings as to stewardship and sense of responsibility. Secondly, the legal form of the BOOTs and the objectives of Metropolis when establishing the BOOTs are described. Thirdly, the environment of regulation and reporting within which each BOOT operates is examined. Fourthly, the payment arrangements are explained.

5.5.2.1 *The water service*

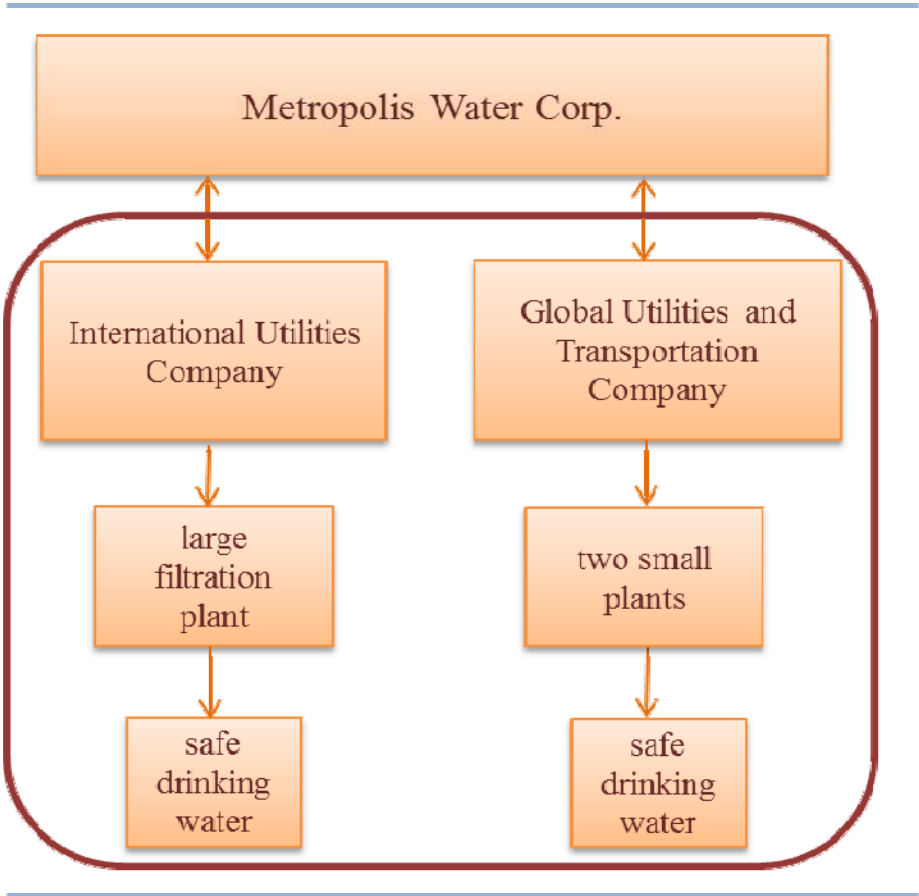
The Metropolis water service is comprehensive, commencing with raw water supplied by the catchment authority and comprising all drinking water and waste water system infrastructure through to the customer. Within that chain are the

case study water treatment plants. The area served is approximately 13,000 km² and the number of connected properties is 1.8m. Charges for water services provided in 2010 amounted to approximately \$2.2b and net assets were \$5.5b (Metropolis AR, 2010). The largest filtration plant treats approximately 80% of the drinking water (Implementation Review, 2008).

5.5.2.2 Legal form and objectives

For the period of the contract “...the operator shall be the legal owner of a filtration plant ...At the end of 25 years Metropolis will be required either to renew the arrangements or, alternatively, purchase the plant at market value” (Auditor-General, 1996, p. 91). Metropolis is a state-owned statutory corporation. The private participant for the large filtration plant is International Utilities Company which has an annual revenue of approximately \$20b. Similarly, for the two small filtration plants the private participant is Global Utilities and Transportation Company with an annual revenue of \$50b. The relationships which are the subject of this BOOT case study are illustrated out within the red box of Figure 5.4.

Figure 5.4 Water filtration plants: BOOT concessions



The governance of these relatively simple contractual relationships is affected by way of Metropolis establishing a section within its organisational structure which is allocated the responsibility and authority to manage contracts for the treatment of water, be that drinking water from surface catchments and desalination plants, or sewage and waste water. The section was found by this research to be effective. These contract management arrangements are examined in greater detail in *Section 5.5.3.3.1 Ensuring suitable participants*.

Metropolis had two major objectives in entering into the BOOT contracts: one, obtaining a sufficient quantity of drinking water of a quality higher than was then available; and having another party fund the plants at a time of financial pressures, both those general to the public sector in the 1990s and those unique to Metropolis's predecessor which was being prepared for corporatisation. The increasing customer population and the raising of national water quality standards converged to result in Metropolis adopting the strategy of filtering water to provide both increased volume and increased quality of drinking water. The preparation of Metropolis's predecessor for corporatisation required that it minimise its commitments to servicing debt and generate relatively high dividends for the government as owner. The state government was subject to limitations upon borrowings imposed by the federal government at the same time as Metropolis was required to make major capital outlays to address waste water issues and fund the water filtration. Also, Metropolis was not confident that the pricing regulator would approve the flow-on of all of these capital costs. The BOOT concession was attractive because it required no capital contribution by Metropolis and because the costs of treatment of water by the privatised BOOT model were estimated to be less than if Metropolis itself constructed and operated the plants (Mumford, 1996).

5.5.2.3 Regulation and reporting

The regulatory and reporting environment which applies to Metropolis (and thus the drinking water and the operation of the plants) is state-based and applies to drinking water, sewerage and waste water systems state-wide. There is no material difference between the regulation and reporting environment applying to Metropolis and those applying to each of the three previously described case studies. For that reason this thesis proceeds on the basis of not further explaining the regulation and reporting applying to Metropolis.

There is significant accessibility to detailed information on Metropolis's Internet site, including the quality of drinking water at the filtration plants and at customers' taps.

5.5.2.4 *Payment arrangements*

The payments to the private participant in both BOOT contracts are structured identically. The literature from 1996 indicates the quantum of payments was then different. Metropolis is required to pay the plant owners a tariff comprised of two components: an availability charge and a usage charge. The availability charge is a minimum, fixed payment stream, which is directly related to repayment and servicing of the underlying debt and the operator's investment. The usage charge varies with the quantity and quality of raw water delivered to the private plant operator and delivered by the private plant operator to Metropolis (Mumford, 1996). This feature reflects the additional costs incurred by the plant operator if the raw water supplied is of poor quality. In addition the payment to the operator is reduced if the treated water supplied by the operator falls below the quality level specified in the contract.

Directly related to these payments, linked to the quality of the water produced, is the availability of information between the parties; that is, the symmetry or asymmetry of information. As a consequence of the 1999 contaminations a very high level of sharing of information between the private operators has been institutionalised, both to meet the needs of the ongoing collaborative research and to provide immediate knowledge as to water quality and plant malfunction. The large filtration plant is subject to continuous electronic monitoring, with malfunctions being immediately detected electronically, recorded and shown on the relevant screens in the control room, which are under constant surveillance and backed up with electronic alarms (Implementation Review, 2008). This real-time testing and monitoring is backed up with manual, immediate testing every six hours. Information from the electronic monitoring and manual tests as to major treated water characteristics is transmitted real-time to both Metropolis and the catchment authority. Metropolis can view all the system data, but only at the plant (Implementation Review, 2008).

This immediate sharing of information and transparency of operational inputs and outputs, quality etc. negates the possibility of the agent (the plant

operator) having an advantage by way of information asymmetry. This was confirmed through the Metropolis informants and private operator informants who collectively portrayed the situation of the principal (Metropolis) having extensive detailed information as to the O&M of the filtration plant and, through its contract management section, responding to that information to achieve stewardship of the quality of water and O&M of the plants. This exhaustive sharing of information and information symmetry suggests that the Agency Theory conceptualisation of information asymmetry is not in operation in the BOOT water treatment case studies.

5.5.3 The findings

This section firstly explores whether there was stewardship of the water quality and of the filtration plant and, if so, the nature of stewardship behaviour. Secondly, the evidence as to whether there was a sense of responsibility on the part of each filtration plant operator is assembled and an analysis made of how important that sense of responsibility was to the stewardship behaviour on the part of the agent. Thirdly, the data as to actions to increase the sense of responsibility of the agent or steward are assembled and analysed.

5.5.3.1 Stewardship of infrastructure

In the preceding three case studies two key themes as to public values, the efficient use of public resources and the quality of services provided to water system customers, were identified. The BOOT water filtration plant case study archival and informant data had an overwhelming focus on the quality of the service provided — safe drinking water. Yet this thesis focuses on the stewardship of critical infrastructures to the standard of meeting evolving public requirements. Accordingly the data are interrogated for evidence of stewardship of the infrastructure assets: the filtration plants. This section firstly examines the stewardship of the quality of the drinking water produced by the plants. Secondly, the maintenance of the plants to meet emerging public needs, both now and in the period leading up to the end of the 25-year term, is examined. Thirdly, if stewardship of the plants is shown to have been achieved, then the data will be analysed to understand the level of behaviour of the steward.

Before commencing the examination the performance of the Metropolis water system against like utilities utilising the National Water Commission report is

compared so that the water quality achieved can be seen in the context of Metropolis's overall satisfaction (or otherwise) of public values. As to the efficient use of public resources, the combined operating costs for water and sewerage per property when compared with 10 other like-sized services was shown to be the fifth lowest in 2009–10 and the sixth lowest in 2008–09 (National Water Commission, 2011). Metropolis reported the lowest level of customer complaints of the eight utilities compared during 2010 (National Water Commission, 2011). However, it reported the second highest average duration of unplanned interruption to customers' water supply when compared to eight other utilities. The Metropolis service recorded the third highest percentage of calls answered by an operator within 30 seconds when compared to seven other utilities.

To complement this data, and to understand the less favourable performance as to the duration of unplanned interruption to services, the archival and informant studies sought out any significant adverse mention as to service quality. This questioning revealed only the contaminations of drinking water which are addressed in the following paragraphs regarding the stewardship of water quality. Overall, it was found that a high quality of services was provided indicating that Metropolis had achieved stewardship of the overall water system of which the BOOT water filtration plants were crucial elements.

5.5.3.1.1 Stewardship of water quality

Improving the quality of the Metropolis drinking water was one of Metropolis's two major objectives in the 1990s in entering into the BOOT contracts for the water filtration plants. An absence of expertise in filtration technology influenced Metropolis to go to the market. In 2000, possible contaminants were found in the drinking water which originated from the large filtration plant. During the revelation of the ongoing contamination the government established a Royal Commission to inquire into the contaminations (Royal Commission, 2000). The Royal Commission found that it was likely that the contaminants were in the raw water provided to the private operator by Metropolis. A subsequent review of the implementation of the Royal Commission recommendations (Implementation Review, 2008) observed that in 2000 there had been a breakdown in communications and the procedures for such emergencies were so inadequate that contradictory statements were issued by the state health department and Metropolis. By the end of

the year 2000 when the supply of contaminated water ceased, consumer confidence of the safety of their water was severely undermined and the reputation of Metropolis was damaged.

The 2000 Royal Commission made nearly 100 recommendations directed at ensuring that all water providers supply water which was clear of the contaminants. The Implementation Review in 2008 reported that the standard for the permitted turbidity (a surrogate for contamination) specified in plant operation contracts had been made more stringent. The Implementation Review found that Metropolis and the filtration plant operator had adopted (and delivered) a standard of water quality that was equal to the world's best practice (Implementation Review, 2008, p. 35).

Neither the archival nor informant studies revealed any subsequent drinking water contamination events. The focus of the private participant and Metropolis informants at the time of this thesis was invariably upon the safety aspects of water quality. Other issues were consistently portrayed as being of lesser importance. A feature which distinguishes the Metropolis Board from that of other government water entities in the case studies is the highly visible reference to a “material water quality event which may threaten public health ...” as one of the top five strategic risks specified in the 2010 Metropolis Annual Report. The importance of the stewardship of the quality of the drinking water is demonstrated by the Metropolis Board having established within its membership a Public Health Committee which oversees drinking water quality reviews, analyses and monitors public health matters, oversees the research and development strategy, and oversees the management of the Metropolis response to material public health issues (Metropolis AR, 2010).

In summary, the water contamination events led to an exceptionally high level of scrutiny of the quality of drinking water provided by the BOOT water filtration plants and the establishment of very stringent measures and controls. In addition to those controls the 2008 Review provided a very public assessment of compliance with those requirements by all water filtration plants providing water to Metropolis. The archival and informant studies confirmed that the water quality that was found by the Implementation Review has continued. It is concluded that the

private filtration plant operators now continually achieve stewardship of the quality of the Metropolis drinking water.

5.5.3.1.2 Stewardship of infrastructure

In *Chapter 2: Literature Review* this thesis formed the proposal that in the context of critical infrastructures the appropriate conceptualisation of stewardship was one which encompasses the public's requirement for continual improvement, above the maintenance of the asset to the standard when entrusted to the steward. The case study water filtration plants have been shown by the 2000 contamination events to be essential to the water system and the health and peace of mind of the Metropolis public. This thesis found that there is now stewardship of the quality of the drinking water produced by the plants. The question then is whether there is stewardship of the privatised plants as critical infrastructures both now and in the lead up to the possible transfer of the assets from the private owner operators to Metropolis at the end of the 25-year contract term.

There is significant data as to the extent of stewardship of the large filtration plant by way of the very public Royal Commission and 2008 Implementation Review. The 2008 review chronicled the changes that have been made and acknowledged that the large filtration plant had been re-constructed to the world's highest standards (Implementation Review, 2008). Similarly the two Metropolis informants in 2011 were of the view that the contractual requirement to maintain the output of the plants at specified levels of quality and quantity resulted in the case study plants being maintained to a high standard. This data suggests that there is now strong stewardship of the privatised water filtration plants.

The remaining question then is whether stewardship to meet evolving requirements will continue in the period leading up to the end of the 25-year contractual term. The literature revealed that "At the end of the contract period the operators have the expectation that contracts will be renewed" (Mumford, 1996, p. 66). Mumford (1996, p. 66) goes on to say "This, and a provision for Metropolis to buy back at its own evaluation, provide incentives for the operators not to run down the assets toward the end of the contract period." The Auditor-General in his 1994 Annual Report noted that "At the end of the 25 years Metropolis will be required either to renew the arrangements or, alternatively, purchase the plant at market

value” (Auditor-General, 1994, p. 91). Clearly both options remain available and both reward the operator for maintaining the plant to a high standard.

The informant interview study was used to put the question in the negative: that is, will the private operators cease investment and reduce maintenance so as to maximise profit in the years immediately before the end of the 25 years? Metropolis informant D3 said that:

They [the operators] have to ensure the plant is available all the time. That means if the plant is shut down there is a penalty against them, so they have to have a maintenance management system and we audit that system. They can't run it down and not replace [it], it is not possible because we have access to all the maintenance management systems and we can predict.

All informants approached the matter of what would happen at the end of the 25 years from the unstated assumption that the status quo would continue; that is, that the contracts would be extended. Informant D5, from the private operator of the two small plants, described the approach as “...the BOO delivery model, with a silent T to transfer at a later date.”

In summary, having regard to the rigorous regime of contractual measures and scrutiny by Metropolis it is reasonable to conclude that there is currently strong stewardship of these critical infrastructures. In respect of the stewardship of these infrastructures in the lead up to the end of the 25-year term the literature, archival data and views of the Metropolis and private informants suggested strongly that the contractual terms as to extension or transfer of the assets to Metropolis at a market price will result in the maintenance of the treatment plants to a high standard. It is concluded that there will be stewardship of these critical infrastructures.

5.5.3.1.3 Stewardship behaviour

Having established that the private operators have achieved stewardship of the quality of the drinking water and of the filtration plants this thesis now explores the nature of the stewardship behaviour of the agent or steward and whether that was something more than contractual compliance, which is the aspiration of the Agency Theory model. The following paragraphs assemble the data as to the behaviour of the steward, whether there was contractual compliance, and the extent to which the steward acted in the interests of the principal.

Having regard to the public availability of key documentation resulting from the contaminations, literature and archival documents were first interrogated and then the stewardship behaviour issue pursued with the informants. The original contracts apportioned risks related to quality and quantity performance to the plant operator, giving Metropolis monitoring rights and the right to conduct its own water quality tests to satisfy itself that the operator was operating and maintaining the plant in accordance with the contract (Mumford, 2000). The issue of whom or what was responsible for the contaminations vexed the Royal Commission. The Commission could not obtain a satisfactory explanation of reasons for the first contamination event and concluded that the cause of the later events remained unresolved between the parties with the private company claiming the contaminations were misidentifications by Metropolis's laboratory (Royal Commission, 2000). The adequacy of testing procedures was further put into question by there being no increased incidence of attributable illnesses following the contamination events (Mumford, 2000), all in all suggesting that information was inadequate and inaccurate and far from the desirable state of information symmetry. Notwithstanding the International Utilities Company's dispute with Metropolis regarding the correctness of the identification of the later contamination events, a thorough search of the literature and archival documents revealed no suggestion that the behaviour of the plant operator was against the interests of Metropolis.

The 2008 Implementation Review revealed significant improvements to the equipment and procedures at the plant and much more rigorous monitoring and testing by the operators and Metropolis. It is clear from the Implementation Review that new tariffs have been negotiated, particularly as Metropolis instituted much more demanding standards as to water quality. There is no information to suggest that the additional equipment and procedures were introduced on terms to the detriment of the operator. The informants from International Utilities Company had no knowledge of the detail of what changed and who paid, consequent upon the contamination events. The evidence was that the company operating the large filtration plant had met the contractual requirements and had acted strongly in the interests of Metropolis but in so doing had not at any stage done anything extraordinary; that is, anything for which it was not compensated in accordance with the contract.

Turning to the informant study, Metropolis informant D4 related his experience of the large plant operator as being one of a partnership working on the operational outcomes but with the operator having “... *a commercial bent...and we have to as well...we have to look rationally at what they propose...*”. In response to questioning as to whether the operator approached the contract in a literal manner Metropolis informant D3, who has been involved in the large filtration plant since 1996, said that “...*in 1996 they [the operator] were mainly concerned about the commercial aspect, the contractual requirements.*” The same informant then outlined a steady transition to the present time whereby changes to the contract and structured communication at the operational level and contract management level have resulted in the operator taking the holistic ‘catchment to tap’ perspective. The day-to-day operational relationship at the various levels was described by operator company informant D1 as “*very cooperative*” and this perspective was confirmed by the other informants from that plant. The discussion as to cooperation flowed into the shared research activities which were described by both Metropolis and private operator informants at the large filtration plant in very positive terms such as ‘collaboration’ and ‘partnership’, revealing a high degree of integration between the entities and the private company acting strongly in accordance with Stewardship Theory prescriptions (e.g. very closely shared goals and the steward completely acting in the interests of the principal). In respect of the contract for the two small filtration plants the operator company informant D5 conveyed a perspective of acting in the interests of Metropolis and being very outcome-oriented. The two small plants were not involved in the contamination events although outcomes such as higher water quality targets, intense monitoring and testing were applied to all water filtration plants. The Global Utilities and Transportation Company informant D5 is responsible for the provision of other services to Metropolis, such as the operation of a desalination plant and O&M of waste water treatment plants, and consistently portrayed the perspective that his company not only met the terms of the contract but also “...*see ourselves as an extension of the client...*”. This conceptualisation of the steward as an ‘extension’ is a powerful way of depicting an alignment of goals and actions that is so complete that, to the external observer, there is no discernible gap between the principal and steward.

The remaining question then is the extent to which the agents or stewards acted in the interests of the principal. Importantly, the ease by which the contractual outcome (i.e. safe drinking water) could be specified in precise terms and the criticality of those terms being met, led the informants to talk in terms of very precise compliance with the contract, notwithstanding the previously discussed strong relationship characterised by Stewardship Theory prescriptions of coordination, collaboration and partnership. When asked whether the private operator would do anything to their own detriment such as paying for something not included in the contract Metropolis informant D4 said:

There aren't many grey areas, because they own the site and are responsible for the site, they own the plant and are responsible for the plant, they manage all operations within that site and deliver us performance, outcome-based. So there might be a few other things depending on arrangements for procurement for energy those sorts of things, but essentially they are responsible for that side of things, in outcomes-based contracts.

The other informants reflected this perspective saying that neither Metropolis nor the private companies expected that the companies to do anything extraordinary, alluding to the commercial nature of the relationship and highlighting the simplicity of the contractual terms and outputs as encompassing anything that might arise.

Drawing this data together it was found that the operators of the filtration plants acted strongly in the interests of Metropolis, identifying strongly with the goals and objectives of Metropolis but within a scheme of rigid contractual monitoring and compliance. Such contractual arrangements are characteristic of the Agency Theory model suggested by Eisenhardt (1989) wherein the strict model of goal conflict is relaxed, allowing for goals to be shared.

5.5.3.2 *Sense of responsibility*

This section assembles evidence as to whether there was a sense of responsibility on the part of the BOOT filtration plants to Metropolis and then analyses how important that sense of responsibility was to stewardship behaviour on the part of the private companies.

There was significant evidence that the two water filtration plant private operators have conducted themselves with a strong sense of responsibility to

Metropolis. For the large filtration plant this sense of responsibility was tested by the water contamination events. The opportunity existed for International Utilities Company to not act in the interests of Metropolis but rather seek to blame Metropolis and not pursue the goals and objectives of Metropolis (e.g. safe drinking water and reputation). The evidence is that International Utilities Company committed additional resources, called on its expertise from elsewhere in the world and took whatever steps were necessary to remove any possibility of the future supply of contaminated drinking water (Implementation Review, 2008).

Safe drinking water being the sole output or outcome from the contractual relationship and the criticality of the water being safe brings a sharp focus to the role of sense of responsibility on the part of the steward — the water filtration plant operator. Is sense of responsibility on the part of the steward essential when the output is critical? Is sense of responsibility essential to there being stewardship of the drinking water? The evidence was of immediate and subsequent actions by International Utilities Company to remove any possibility of the future supply of contaminated drinking water. As safe drinking water is the inviolate goal of the principal it would seem essential that the steward act with such an unequivocal sense of responsibility. This finding was tested by examining the obverse scenario. If the company had not acted so decisively to remove any possibility of future contamination then the sense of responsibility to the principal would be incomplete or inadequate, with the company acting against the interests of the principal. In essence the agent would have goals divergent from the principal and would be acting in an untrustworthy manner — all Agency Theory normative behaviour. This line of argument leads to the conclusion that it is essential that there be sense of responsibility to the principal on the part of the filtration plant operator for there to be stewardship of the drinking water. Further it is apparent that in the instance of an infrastructure with a critical outcome, such as drinking water, the principal would see the operator having a sense of responsibility as essential.

Yet the data gathered by the informant study raised the possibility that the sense of responsibility is not directed solely to the principal (Metropolis) but that there was sense of responsibility to another party: the public or the public's health. International Utilities Company informant D1 reflected upon the risk to private operators from a water contamination event saying “...*anything that is water quality*

which is health related...can affect the share price back in Europe...it can damage our Group's business opportunities in the future...so it [water quality] is something that is very important to us as the operator...It is an essential service and you are dealing with public health, so there is a very high level of responsibility in the industry...". Unpacking this data reveals a mixture of motives: financial in respect of the impact on share price, and benefiting the public by providing essential health services. On their internet sites, the International Utilities Company and Global Utilities and Transportation Company outline strong claims to being authentic providers of drinking water, sewage and waste water services, acknowledging "access to drinking water and sanitation as being a fundamental human right." (United Nations General Assembly, 28 July 2010). Whist this research is circumspect as to claims made in such corporate-controlled media it would be reasonable to acknowledge that there is a possibility that both private companies, by way of their long histories of providing water services throughout the world, have demonstrated a sense of responsibility to those publics or humanity generally. The question then is in what way does this sense of responsibility to the public impact upon the sense of responsibility to the principal. The data provided by the other four informants established that there was a very strong sense of responsibility to Metropolis on the part of both private companies and did not reveal any indication that sense of responsibility on the part of the private operators to the health of the public conflicted with their sense of responsibility to the principal.

In summary, there was significant evidence that the private water filtration plant operators felt a strong sense of responsibility to the principal, Metropolis. That sense of responsibility to the principal was concluded to be essential to achieving stewardship behaviour on the part of the agents, the private companies. However, there were data which suggested that the international water services companies which are the operators of the filtration plants are jealous of their reputation and have a sense of responsibility to the public. This other sense of responsibility was found to not conflict with sense of responsibility to the principal. However, how the jealous protection of reputation and sense of responsibility to the public has impacted upon the sense of responsibility to the principal in these case study filtration plants is examined in the next section.

5.5.3.3 Actions to increase sense of responsibility

The preceding section of this thesis established that there was sense of responsibility on the part of the two steward private operators to Metropolis. This section examines the actions which were thought to impact upon the sense of responsibility on the part of the steward private operators. The data formed into themes which are explored in the following sections:

- ensuring suitable participants;
- clear contractual terms; and
- incentives to private participants.

5.5.3.3.1 Ensuring suitable participants

The notion that the suitability of the private participants in the two BOOT water filtration plant contracts impacted on the sense of responsibility first emerged in the literature study and was a prominent matter in the archival study and in turn the informant study. Similarly, data as to the suitability of Metropolis emerged in the literature, archival and informant studies providing a significant body of data as to how Metropolis has supported the private operators to act with a sense of responsibility. This section first examines the criteria as to the suitability of private participants. Then evidence as to the suitability of the government entity (Metropolis) and its employees is then examined.

5.5.3.3.1.1 Suitability of private entity

The criteria as to suitability that emerged ranged from capability for the technical aspects, ongoing technological transfer, to suitability to work in a long-term, highly collaborative relationship, and reputation.

In respect of technical suitability, Metropolis went to the market in the mid-1990s to have the water filtration plants constructed and operated acknowledging Metropolis as being relatively inexperienced with filtration systems. Its procurement strategy of opting for several operators gained access to a wider range of treatment technologies and treatment performance data to be used to assess the performance of the other company (Mumford, 2000).

The contractual requirement of ongoing technology transfer was a strategy to develop the capability of Metropolis. Long-term Metropolis water

treatment engineer informant D3 advised that each of the private operator companies had “... *brought aspects of technology that brought actual benefits to Metropolis and the wider [Australian] water industry by bringing international treatment expertise.*” Metropolis informant D4 advised that “*The idea is that we will work with them on joint R&D [research and development] and Metropolis will fund it and bring improvements to Metropolis.*”

The suitability of the private participants to work in a long-term, highly collaborative relationship was raised by both Metropolis and private informants in the context of the long-term nature of the contract and long-term impacts of decisions and actions inherent in the provision of safe drinking water. The large filtration plant operator private company informant D1 described the necessity for a strong relationship to support the operator acting with a sense of responsibility and asserted that the relationship was “*very strong*”. When questioned as to evidence of the strength of the relationship he advised that the parent company, International Utilities Company, requires that for all such long-term contracts a formal customer relationship survey of the client by a third party be carried out regularly. Informant D1 said that the most recent customer relationship survey in 2010:

...gives us some comfort about the day-to-day operational relationship at various levels in the organisation...it is very cooperative and we have been very happy with the relationship all the way through... Metropolis is a major player in the industry in Australia, it is a valued client, we would do everything to keep our client happy.

Private company informant D1 raised the matter of the risk to Metropolis in contracting long-term for a company to own the asset which:

...really tied you to those people, so ... they have to find the right partner, that comes back to the issue about barriers to entry and, the market being controlled by a couple of very reputable companies. Let's say we had a buy-out and they [the new owners] were less interested in the water industry and maybe were focusing more on energy and diverted resources away and didn't have a long-term view, I guess there is a risk to the principal.

When asked how a government could protect against ending up with an unsuitable partner private company informant D1 said *They [Metropolis] mitigate that. They have stepping stones in the contract. If you don't do x, y and z we will*

come in and take over and we [Metropolis] will operate the plant and fix it, and charge you, so they protect themselves contractually. The reputation of the filtration plant operators was a dominant theme throughout the archival and informant studies, distinguishing the BOOT case study from the other three. In the literature regarding the awarding of contracts to private operators the term ‘reputation’ was not used, but rather the discussion went to selecting companies which had the ‘technical capability’ to construct and operate water filtration plants. Following up on the contamination events the matter of reputation was all-pervading in the context of the protection provided by the operator being intensely motivated to ensure that safe drinking water is seen to be provided, so that the international reputation for safe drinking water is not adversely affected. The conduct of International Utilities Company in responding to the contamination events was acknowledged in the Implementation Review (2008) report which emphasised the world-wide operations of the company and its jealous protection of its high reputation and recorded that the company was fully meeting contractual requirements and providing the highest standards of water purity.

The perspective of the private company informant D1 was:

There was a lot of good that had come from it [the contamination events] because of the responses afterwards. Both organisations had reputational risk through the incident so anything that is water quality which is health related ... can affect the share price back in Europe ... it can damage our Group's business opportunities in the future ...so it [water quality] is something that is very important to us as the operator ...

Metropolis informant D4 said “Reputational risk has a key influence...International Utilities Company and International Utilities and Transportation Company ... are here for the long haul, they’re not here for four or five years.”

5.5.3.3.1.2 Suitability of government entity

The private informants said that the capability of Metropolis and its employees to interface with their respective companies was key to their being able to act with a sense of responsibility. The evidence went to the capability of Metropolis to manage contracts generally and the capacity and practices that Metropolis had developed to manage the water treatment contracts.

It is highly likely that Metropolis has a deep capability to manage contracts for construction and O&M. The 2010 Metropolis Annual Report reported procurement of about \$2b of services by over 300 contracts together with the ongoing management of nearly 700 contracts with a value of nearly \$8b. When asked whether Metropolis had the capability to manage contracts such as the filtration plant construction and operation private operator informant D5 advised that *“...they either bring an independent verifier, or for the XYZ treatment plant...Metropolis themselves reviewed their assets and made a detailed analysis of whether we are looking after them effectively and efficiently.”*

In respect of the capacity of Metropolis to manage the filtration plant contracts, private company informant D1 said: *“...Metropolis operates water filtration plants themselves, they have failures on their plants and they share that information with us. They will come and do an audit on our plant to see that we are not exposed to the same risk. If they have a safety incident, they will share with us the lessons learnt.”* In addition to that technical knowledge of the business, Metropolis has invested in employee capacity to manage the plant contracts. Large filtration plant company informant D1 said:

... possibly part of the success of this arrangement is that there is a dedicated team, because Metropolis have a number of private operators on the water plants...they have set up a dedicated contract management unit. That is very important to us as the operator because Metropolis is a very big organisation...they all indirectly have an interest in what is happening on water production and it is very difficult for us to operate a plant but to also engage with a client that is very large....

The leader of the Metropolis contract management unit, informant D4 explained that the major part of the unit's work is around water treatment, drinking water treatment, or sewage or waste water treatment and that a large amount of treatment is contracted out. Informant D4 said:

... I think with every contract it takes a while to get the communication right, especially when the relationships are complicated and it has such impact. Things like the contaminations taught us that. In our case [Metropolis] for all our contracts we follow this model...we have a contract meeting and an interface meeting. At the interface [monthly] meeting we talk about performance and operational issues, how we can

get those working better, so we talk about partnering and communications, it's where we talk about learnings from incidents. At the contract meeting it is usually just a senior operations manager and a contracts manager. If there is any issue around performance, that will come up there, KPIs [monthly] those sort of things. We will apply the letter of the law, they know that, that's the straight bat that we always play, we are a government organisation. We don't bend on that.

Verification of this structured arrangement was sought from the Global Utilities and Transportation Company Informant D5 who said:

There are probably three tiers. The first tier is that we have that "face to face" on a periodical basis, it could be a week or every couple of weeks at that level, just call in and say hello, it depends on the type of plant and size of plant. That means that the office manager of that particular plant would be talking to somebody that works for [Informant D4] on a regular basis. The second one is our monthly interface meeting. For large contracts it is monthly and sometimes we have a quarterly meeting. For that meeting we usually actually bring in the catchment authority as well and the people downstream. We actually say, delivering water to the customer is not just Global Utilities and Transportation Company looking after the contract here, it actually involves the people who look after the pipes, which is the Metropolis people, it actually involves the Metropolis people who look after the bulk water and give us the water in the first place. We go through an agenda to make sure we are continually meeting the customer's requirements as a team, and that has worked fairly well. And the last one is what we call periodical partnership meetings and that is getting together with your owner and saying, what has worked well over the last four to five years, what can we improve on and where do we want to go next, building up relationships.

When asked whether the Metropolis contract managers have power over the private operator Global Utilities and Transportation Company informant, said:

Oh most definitely. At our contract meetings that are monthly or quarterly, we have to report on the KPIs, we have to report on any incidents, we have to report on contract areas that we haven't met. They then write us a letter that says in accordance with your contract, we expect you to let us know why you are not meeting this sort of thing. They are custodians of the contract. They are contract managers.

In respect of the issue found in the early alliances case study where the government entity employees with whom the contractor interfaces seek to treat the contractor's employees as inferior and generally behave in a way which frustrates the sense of responsibility of the contractor, private company informant D1 advised that there was no inappropriate behaviour on the part of Metropolis employees, observing that *"Metropolis manage their staff, we manage our staff, we are separate entities with separate responsibilities."* Private informant D2 said *"But Metropolis don't manage our staff, we have a contract, there is an interface at management level, there is an operational interface between the controllers and that sort of thing, but they don't direct our staff at all."* Private informant D2 went on to say: *"They see us as the expert, they take our word on water treatment, if we tell them that we can't take this [raw] water, or a certain aspect of the water, you need to fix this, they will listen."* Private informant D1 contributed *"Because they have a vested interest, if we fail, they fail, it's that inter-dependency."*

5.5.3.3.2 Clear contractual terms

The clarity of the contractual terms was seen by informants as facilitating the sense of responsibility of each of the private operators. The clarity comes from three features of the relationship: the single principal/single agent relationship, the limited variation in the inputs and highly specified nature of the output (drinking water), and the clear separation of roles.

The simplicity of the contractual arrangement was seen by one large filtration plant company informant as contributing positively to the company being able to act with a sense of responsibility to Metropolis. International Utilities Company informant D1 said *"The reason why this relationship works so well...is that we have one client which is Metropolis, so everything we do in this operation [the filtration plant site] is based on serving a single client."*

This reference to a single filtration plant site (or in the case of the other BOOT contract, two sites) highlights the contractual requirement that the two companies must produce the drinking water from the three plants thereby bringing further simplicity to the transactions. Similarly the other input, raw water, is known intimately by the operators as there is no variation as to the source of the water and the operators were provided with the history of the technical aspects of that water when entering into the contracts. As to the output of the contractual relationship the

informants saw this as elegantly simple, with the Metropolis informant D4 declaring *“We are about producing water, a certain quality and quantity that protects public health and that message is well and truly through the whole site. The game is relatively simple. So even when there is an incident, it focuses on the goal.”* Similarly the large treatment plant company informant D1 said *“The boundaries are very clear, we receive water within a specification, within a range and we have a contract to produce water of a certain quality.”*

The private company informants were enthusiastic about the benefit of the whole plant operation, the ownership, design and staffing being the sole responsibility of the operator. Private company informant D2 put it this way: *“They [Metropolis] benefit from our autonomy, we are governed by ourselves; we have got our own systems and standards that we set up to achieve our efficiencies, whereas they are regulated.”* The informant from the company D5 operating the two small plants conceptualised their operation of the plants as *“inside the box”* with the outcome of what happens *“inside the box”* being the objectives of Metropolis. Informant D5 said: *“Everything inside the box is the way that Global Utilities and Transportation Company do business. All our staff have Global Utilities and Transportation Company uniforms. All our business systems and mode of operation is all the Global Utilities and Transportation Company way of doing things.”* Metropolis informant D4 confirmed this clear separation of roles and responsibilities saying: *“There aren’t many grey areas, because they own the site and are responsible for the site. They own the plant and are responsible for the plant. They manage all operations within that site and deliver us performance, outcome-based, quality, quantity.”*

5.5.3.3.3 Incentives to private participants

The matter of incentives to the private companies to act with a sense of responsibility was not declared by the informants to be as important as having suitable participants, or indeed was less important than such incentives were for the private companies participating in the Case Study A alliance. However there was a negative financial incentive that is, a penalty if water supplied is not of an adequate quality. Yet in the context of other issues, data as to incentives emerged. This section firstly outlines the findings as to the term of the contract. Then data as to the importance of additional work are assembled. Thirdly, the opportunity for the

operators to carry out research, either independently or in concert with Metropolis, at their filtration plants is examined.

5.5.3.3.1 *Terms of contract*

The term of the contracts for each of the BOOTs is 25 years, resulting in Metropolis being required to decide by 2019 whether to extend the contract or finalise the transfer (at a market valuation) of the ownership to Metropolis. The way in which this relatively long term acts as an incentive was explained by International Utilities Company informant D1 who said *“The beauty of these type[s] of contracts is that it is business, so if you have to invest in an asset, obviously you have to pay down that loan, and...it comes with a long-term operating contract which is a guaranteed income stream for a long period.”* Metropolis informant D4 spoke to the matter of those long-term contracts being extended saying

There is obviously commercial interest in a long-term contract. There are options to extend those sorts of contracts, and I think they [the two operating companies] would like to extend. If you have got a long-term contract, it is in your interest to extend that, to have that cash flow. The water industry is quite stable and the cash flow is there from this sort of investment.

Global Utilities and Transportation Company informant D5 confirmed the attractiveness of the long-term income stream and highlighted other cost saving aspects saying:

...if we can set up longer-term contracts for our labour...if you're doing it every twelve months or every two years it's hard, but if you can go for four years which is the maximum in our state at present, that's good. In regards to chemicals and power it is better to be able to go to the chemical industry and power industry and say look we have a number of contracts throughout Australia for these years that we would like you to give us your best price. The last one is improvements. If it's a new infrastructure it takes the first twelve months fixing up defects or doing optimisation...So the third and fourth year you will try and go for better systems, continual improvements, so if it is a five-year contract, by the time you hit five years, you probably will have the project down to a fairly fine art if everything has gone according to plan...So out of all of that, I would say a 10-year contract for a metropolitan O&M. I wouldn't want to see any lower than that. To gain benefit, to say to your

shareholders you've got continuity for the next 10 years, we will put a bid in, there is usually a lot of effort goes into winning these contracts.

Whilst that data supports the desire of private companies for a significant minimum term one informant provided a very interesting insight into the issue of the private company's need to be able to exit from a long-term contract. Global Utilities and Transportation Company informant D5, after talking of the minimum contract, used the concept of a continuum of the term of contracts saying *"At the other end obviously 20 or 30 years, it depends on the client and where they are heading to. But for each of those you could put bus stops or milestone points in and say right, if these KPIs are not being met or the client hasn't shown value for money over a period of time, we [the operating company] can break the contract."*

5.5.3.3.3.2 Additional work

The opportunity for additional work is not provided for within the contracts for the two plants. The reference to additional work that emerged from the data was in respect of additional contracts with Metropolis and work for other utilities which may come to Metropolis as a referee. Both International Utilities Company and Global Utilities and Transportation Company have other significant contracts with Metropolis for the broader range of functions covering waste water and sewage, providing both construction and O&M services. The private company informants advised that the prospect of this additional work was an incentive for the private company to act with a sense of responsibility to Metropolis.

The International Utilities Company informant D1 said *"... an operator earns his margin by doing a good job over a long period of time and having a long-term relationship and focus with the client. They [Metropolis] value the relationship and that is very good for us in terms of future business, so we can come with confidence. When we ask them to vouch for us in front of other clients they do so in a positive way."* International Utilities Company informant D2 said *"They [Metropolis] are quite happy to be a referee for us on other bids."*

5.5.3.3.3.3 Research opportunities

Each water filtration plant contract requires collaborative research between Metropolis and each of the private participants to keep abreast of technology, perform on-site research and exchange findings with Metropolis

(Mumford, 1996; Implementation Review, 2008). This aspect of the contractual arrangements was portrayed by the private company informants as contributing to the strong relationship with Metropolis and the sense of responsibility to Metropolis on the part of each company. International Utilities Company informant D1 advised:

...part of the payments that are received ... is invested in a fund for research where both parties can agree to research projects where it is in [the] common interest and there is another smaller component which is about providing Metropolis access to the wider International Utilities Company technology and research. It also has a very strong research activity based in Europe but with affiliations across the world, many universities, so the many good things that are happening in our Group elsewhere, they [Metropolis] want to tap into that, and similarly we share through our link with Metropolis some of the activities that Metropolis is doing. Some of the research that is done physically on our plant is for the benefit of International Utilities Company.

International Utilities Company informant D1 summarised the research fund arrangements saying “*It is a partnership in terms of the service delivered, but I think another key aspect is the R&D partnership which unites not only the physical asset of the filtration plant and the operation of that, but it really brings two organisations together at a high level in terms of cooperation to actively pursue best practice.*” It would seem that Metropolis’s commitment to the agents to pursue best practice and to do so in a highly collaborative way is providing a strong incentive to the agents to act with a sense of responsibility.

5.5.4 Significance of findings

These findings identify a model of privatised contractual arrangements which is likely to achieve a strong stewardship outcome. The key findings were:

- The water filtration plants operate within a highly regulated, transparent environment.
- There was no information asymmetry favouring either the principal or the agent, but rather there was a real-time sharing of data as to water quality and plant breakdown and full availability to the principal (Metropolis) of data as to plant O&M.

- Because of the contamination events the two private operator companies and the government entity have enduring corporate memories of the adverse impacts of failing to meet public expectations as to a critical service — safe drinking water.
- The private filtration plant operators now continually achieve stewardship of the quality of the Metropolis drinking water.
- There was strong stewardship of the privatised water filtration plants.
- The demands on the part of the public were of an evolving and more demanding nature viz. the water purity expectations were increased, both at the time of contracting in the mid-1990s and again in response to the contaminations in 2000.
- These demands as to stewardship were met by the privatised contractual arrangements.
- The contractual arrangement, whereby Metropolis has the option to extend the contracts or to acquire the plants at a market price at the end of the 25-year contractual term, is highly likely to ensure that there will be no reduction in the stewardship of the plants.
- The behaviour of the private companies was strongly acting in the interests of the principal yet did not go beyond that required by the contracts. There was no evidence of any acts where the private companies did anything for which they were not paid in terms of the contract, with all parties taking the perspective that the relationship was commercial and the simplicity of the contractual terms and outputs positioned the companies to not have to work outside the contractual requirements. For those reasons it was concluded that the contractual relationships were configured in accordance with Agency Theory.
- There was significant evidence that the private water filtration plant operators felt a strong sense of responsibility to the principal, Metropolis. That sense of responsibility to the principal was concluded to be highly important to the agent acting in the interests of the principal.

- From the perspective of the principal sense of responsibility was essential to achieving stewardship of the critical service, safe drinking water.
- It was found that the international water services companies which are the operators of the filtration plants are protective of their reputations and have a sense of responsibility to the public. The fierce protection of reputation was found to contribute strongly to the sense of responsibility to the principal. The sense of responsibility to the public did not appear to conflict with the sense of responsibility to the principal, but rather is a feature or factor which the principal can utilise to achieve alignment with the goals of the principal.
- Sense of responsibility was found to be increased or supported by a range of actions and factors. Ensuring suitable private participants and a suitable government participant (and its employees), clear contractual terms and incentives to the private participants were all found to impact positively on the sense of responsibility of private participants.

It was found that the private stewards would act with a sense of responsibility to Metropolis so as to protect and enhance that reputation with Metropolis and other similar water systems. Metropolis was found to have supported the agents in acting with a sense of responsibility by establishing practices and capability to very effectively manage the contracts. A related matter which supported the effective management of the contracts and facilitated the companies acting with a sense of responsibility was the clear specification of contractual outcomes and the clear separation of the roles brought about by the BOOT form of contract.

Incentives to the agents were found to increase the sense of responsibility. In contrast with the other case studies, direct financial incentives did not come forth in the studies but the long-term nature of the contracts, additional work and the opportunity to carry out research at the plants were seen as incentives which focused the sense of responsibility to Metropolis.

These findings were reviewed to identify any possibility that data which would upset or qualify the findings reported for this case study. In addition to the interview transcripts the evidence drawn from an exceptionally broad range of public sources (i.e. literature and an Auditor-General's report, a Royal Commission, a subsequent

Implementation Review, public documents of regulators and press archives) was re-examined. That further interrogation of the broad and interrelated body of data confirmed the findings reported in this section.

The findings in this BOOT case study should be accepted in the context of a key variable unique to these water filtration plant case studies; that is, the extraordinary large size of the task. The payments made to two private companies are larger than the combined O&M and capital expenditure of any of the other case studies. This large size drives requirements for technical capabilities that only very large companies can reliably bring to the relationship. These large companies are highly likely to be predisposed to act with a sense of responsibility. In a similar vein the criticality of the output of the contractual relationship (safe drinking water) leaves the agent no option but to act with a sense of responsibility to the principal. However, it was found that the BOOT concession form of privatisation achieved stewardship of the critical infrastructure and that there was a strong causal link between sense of responsibility and stewardship-like behaviour. In addition, the findings were that sense of responsibility can be positively impacted by certain actions and factors. Those actions and factors and the other findings from the four case studies are further examined in the following chapter to develop Agency Theory and Stewardship Theory and provide learnings to assist in the configuration of contractual relationships for critical infrastructures.

Chapter 6: Discussion

6.1 INTRODUCTION

The objective of this research was to evaluate the potential of Stewardship Theory to guide the configuration of contractual relationships for privatised critical infrastructures that result in agents acting as stewards. As certain aspects of Agency and Stewardship theories relating directly to the relationships between principal and agent or steward were underdeveloped the researcher sought to understand the actual experience of contractual relationships by collecting data from case studies drawn from the Australian urban water services industry. The findings from the four case studies were set out in the previous chapter. This chapter analyses those findings and develops conclusions as to the impact upon theory, the literature and practice.

For convenience the three Research Questions (RQs) which drove and shaped the findings are repeated as follows:

1. **RQ 1:** To what extent will a steward act in the interests of the principal?
2. **RQ 2:** How important is it that the steward feels a sense of responsibility to the principal for the steward to act in the interests of the principal?
3. **RQ 3:** What actions are available to the principal to increase the steward's sense of responsibility and achieve stewardship of critical infrastructures?

The case study findings now analysed by way of a cross-case comparison utilising the same framework of themes and factors applied from the point of determining the RQs through to the development of the case study findings. The analysis teases out the implications of the evidence for the operation of Agency Theory and Stewardship Theory prescriptions in the context of the agent or steward being a private entity and the principal being a government entity. The analysis delivers for academics and practitioners a clear explanation of the strengths and weaknesses of the four forms of privatisation, and Agency and Stewardship theories

are extended and developed to better explain the dynamics of the inter-organisation contractual relationships which underpin the forms of privatisation.

This chapter firstly establishes the achievement (or otherwise) of stewardship of the infrastructures by the case study forms of privatisation and then explores the nature of what constitutes stewardship behaviour. Second, the importance of sense of responsibility is examined to understand the causal link with stewardship behaviour and to understand the extent to which the principal requires that the steward have a sense of responsibility. Thirdly, the actions of principals which impacted on the steward's sense of responsibility are assembled and analysed to assist principals when configuring contractual relationships.

6.2 STEWARDSHIP

This analysis will first delve into the findings as to the achievement of stewardship of the critical infrastructures by each of the case study forms of privatisation, identifying the Agency Theory and Stewardship Theory characteristics and prescriptions and their link to stewardship (or otherwise). Secondly with the objective of understanding what constitutes the stewardship behaviour of organisations, the findings will be interrogated to establish both aspects of the behaviour relative to Agency Theory behaviour and to identify what constitutes stewardship behaviour. Thirdly, the findings are drawn together to form a definition of the behaviour of the contemporary organisation as steward for the purposes of establishing the reasonable expectations of the government and the community.

6.2.1 Stewardship by privatisation forms

This research was initiated in response to findings of the press, Auditors-General and scholars, for example Funnell et al. (2009), that stewardship of critical infrastructures is not meeting the requirements or values of the public. For that reason this thesis measured whether stewardship was achieved by the case study water systems against two key public values, namely the efficient use of public resources and the quality of services provided to customers (including the environmental impact of operations). This section examines the findings as to whether stewardship was achieved (or not), unpacking any causal link between Agency Theory and Stewardship Theory characteristics of the contractual relationships and the achievement of stewardship.

To facilitate examination of the findings a comparison of key findings is assembled in Table 6.1.

Table 6.1 Characteristics of case study forms of privatisation

	Form of privatisation	Extent of government involvement	Whether stewardship of system was achieved	Characteristics	Theory underpinning contractual form
Case Study A	Alliance	Government is principal and a member of the 'virtual' alliance contributing 1/3 of staffing	Strong stewardship achieved	Closely aligned goals, trust, acting in the interests of the principal	Agency Theory
Case Study B	A traditional contract, but with the agent being two partnership forms of joint venture	Government is both principal and 50% owner of the Joint Venture	Stewardship was achieved	Control, shared goals, acting in the interests of the principal	Agency Theory
Case Study C	Traditional contracts	Government is principal only	Stewardship not achieved	Goals diverged, self-interest by agent, trust not extended by principal	Agency Theory
Case Study D	BOOT form of concession	Government is principal only	Strong stewardship achieved	Closely aligned goals, acting in the interests of the principal, autonomy	Agency Theory

6.2.1.1 Alliance

The alliance form in Case Study A achieved strong stewardship of the infrastructure. In addition the suitability of that alliance form was endorsed by the government entity in Case Study C, the early alliances. That government entity

recognised the deficiencies in the early alliances model and in 2012 introduced a single, NG Alliance which has many characteristics in common with the form utilised in Case Study A. The Case Study A example of the alliance form is closely aligned with Stewardship Theory prescriptions. The private company participants were bound by contractual prescriptions which required that they act only in accordance with unanimous decisions made between the three participants and required that they work towards the collective goals of the alliance. These goals (KPIs and targets) are painstakingly aligned annually with the goals of the principal. In terms established in the seminal Stewardship Theory work of Davis et al., (1997) the two private companies demonstrated strong cooperative behaviours with, and towards, the principal and did not depart from the interests of the organisation (the principal). The annual adjustment of the goals and objectives of The Alliance to align intimately with those of the principal was found to result in the behaviour on the part of the private participants satisfying the description of a steward by Van Slyke (2007): "...makes decisions he/she perceives to be in the best interests of his/her principals." (p. 165). There was a high level of respect between the parties with the managerial starting point of the government entity being to trust the private participants and the government entity continuing to extend trust as evidenced by awarding additional capital works and allowing The Alliance to contract with external parties in the name of The Alliance.

Looking through the Agency Theory normative lens goal divergence was not found, there was no inclination to distrust and no reliance on control on the part of the principal. Accordingly this example of the alliance model could be found to be configured according to Stewardship Theory prescriptions which linked strongly to the achievement of stewardship of the infrastructure. In each of two case studies an informant attributed this effectiveness in achieving stewardship to each participant having 'skin in the game'. Yet the absence of goal divergence, indeed goals were closely aligned, is also contemplated in the Agency Theory model (Caers et al., 2006; Eisenhardt, 1989; Waterman & Meier, 1998) wherein the prescription as to goal conflict is relaxed and the Agency Theory model is expanded to include relationships where there is no goal conflict and indeed consensus. This area of confusion between the prescriptions of the two theories, and possibly common ground, is explored later in *Section 7.2.1 Implications for theory*.

6.2.1.2 Joint venture

The Joint Venture in Case Study B was found to be comprised of two contractual relationships, the first being the traditional contract between the government entity and the two Joint Venture partnerships, and the second being the two partnerships (distribution and retail) between the government entity and each of the private companies. The distinguishing feature of this combined configuration was that the agent (the two partnerships) is 50% owned by the principal. The two partnerships were found to be an example of uneven public/private mixing with the government entity being the more active because it was local. Professor (2008, p. 511) concluded that the Joint Venture partnerships had achieved 'mutual benefit'. As stewardship of the infrastructure was achieved and as Stewardship Theory behaviours such as the Joint Venture acting in the interests of the principal and goals being shared were evident it was concluded that the relationship within the partnership is configured in accordance with Stewardship Theory.

Yet the Joint Venture contractual relationship is characterised by tight control by the government entity, contrasting with the approach in The Alliance where the KPI targets are achieved by decision-making processes guided by principles of unanimous decision-making and decisions being to the benefit of all parties. For the Joint Venture the principal draws on its 50% ownership, 50% membership of the JGB (Joint Venture governance board), and having board members in common with the principal and Joint Venture and effects strong control. Agency Theory describes these governance and control arrangements as monitoring expenditures (Jensen & Meckling, 1976) made necessary by the assumed divergent goals of the agent and principal and the opportunism of the agent. There was no goal divergence but rather goals were shared, aligning with the Stewardship Theory conceptualisation. The Joint Venture was found to unfailingly act in the interests of the government entity with the Stewardship Theory characteristics having a strong causal link to stewardship of the infrastructure. A possible explanation of the principal's tight control is the need for the principal to demonstrate to the independent regulator that the market tensions mandated in a contestable principal/contractor relationship are in play. One principal's informant had advised that the independent regulator had asserted that the relationship was 'really cosy'. More recently, in early 2013 the independent regulator recommended in a discussion

paper that the government separate out the water and sewerage business from the Joint Venture and into an additional completely separate government-owned corporation for the purpose of facilitating regulation of the business (Regional Centre Independent Regulator, 2013). Accordingly it is possible that the principal might be exercising tight control, notwithstanding that the steward was strongly acting in the interests of the principal, to manage known criticism that the principal is favouring the Joint Venture to the detriment of the community.

Nonetheless this finding of strong control (an Agency Theory prescription) being accompanied by Stewardship Theory behaviours on the part of the agent/steward highlights two possibilities. One, that strong control does not preclude Stewardship Theory behaviours on the part of the steward. Stewardship Theory asserts that establishing a less controlling environment by extending the autonomy of the steward motivates the steward to deliver increased benefits to the principal (Davis et al., 1997) and that instituting additional control may signal distrust and lower motivation of the steward to work in the interests of the principal (Tosi et al., 2003). However there was strong evidence that the Joint Venture partnerships acted in the interests of the principal, suggesting that the control by the principal did not diminish their motivation to behave like a steward. Accordingly, whilst this finding emerged from evidence drawn from a single case study it is possible to conclude that the Stewardship Theory model can be conceptualised in the inter-organisational context as encompassing models where autonomy is extended (Van Slyke, 2007) on the one hand, OR strong controls on the other.

Yet the more straightforward possibility is that the tight control by GOCO is a feature of an Agency Theory relationship of the model proposed by Eisenhardt (1989), where the goals of the parties are aligned, albeit that the behaviour of the private participants is like that of stewardship. This finding would be consistent with the finding that the stewardship-like behaviour of acting in the interests of the principal was encompassed within the contractual requirements and that this compliance with the contract did not extend to the behaviour of the steward contemplated in Stewardship Theory, wherein the concept of acting in the interests amounts to something more than contractual compliance.

6.2.1.3 *Traditional contracts*

Traditional management contracts underpinned the relationship in Case Study C, the early alliances, with the government entity being principal and two unrelated private companies being the agents in two identical contracts. It was found that stewardship of the service had not been achieved. There was evidence of at least one agent company acting with self-interest (and against the interests of the principal) accompanied by a focus by the agents upon literal contractual compliance. The evidence as to the behaviour of each company was not distinct as the principal in archival data, and the principal's informants, intentionally obscured which of the private companies was behaving inappropriately, due to there being a current tender process ongoing at the time.

The divergence of goals was accompanied by evidence that the principal did not trust at least one of the two agents, leading the researcher to conclude that these relationships were operating in the manner conceptualised in the normative Agency Theory model. In turn these normative Agency Theory relationships were concluded to have a strong link to there not being stewardship of the infrastructure. However caution must be exercised in generalising these findings because the evidence was gathered from only one case study of two contractual relationships and the principal had chosen to not be specific as to the behaviour of each private company agent. As such the utility of these findings is as a base for an inter-case comparison against the BOOT form of contract.

6.2.1.4 *BOOT concession*

The BOOT form of concession contract in Case Study D was found to have achieved strong stewardship of the critical infrastructures, the water filtration plants. In addition, this research concluded that the mechanism unique to the BOOT model, the transfer of ownership (or alternatively an extension of the contract), was highly likely to result in there being stewardship of the plants in the lead up to the end of the contract term. Applying the typical Agency Theory criterion of goal divergence it was found that there was no goal divergence but rather a very close alignment of goals accompanied by coordination, collaboration and partnership. Yet as has been acknowledged in the preceding case studies some Agency theorists (Caers et al., 2006; Eisenhardt, 1989; Van Puyvelde et al., 2012, Waterman & Meier, 1998) claim that the Agency Theory model can encompass relationships where there is no goal

divergence. Applying a second criterion, that of the agent acting against the interests of the principal, it was found that the companies at all times acted in the interests of the principal. In the case of the large plant, even when confronted by a Royal Commission as to the reasons for contamination of drinking water, the operator did not act against the interests of the principal. A third criterion that distinguishes between an Agency Theory and a Stewardship Theory configuration was the extent of control or alternatively autonomy. Informants from both the government entity and each of the private companies provided evidence that the government entity did not seek to control any aspect of the operations of the three plants but rather the operators were autonomous as to how they constructed and operated the plants.

Autonomy is a Stewardship Theory prescription and in this case study was accompanied by Stewardship Theory behaviours; that is, acting in the interests of the principal, coordination and collaboration. Yet this was all in the context of a contractual relationship which meets the criterion of an Agency Theory model. The dilemma then is whether the BOOTs were configured in accordance with Agency Theory or with Stewardship Theory. This question may be resolved by examining the extent to which the private companies acted in the interests of Metropolis. The operators of the filtration plants were found to have acted strongly in the interests of Metropolis but within a scheme of rigid contractual monitoring and compliance. Taking all the findings into consideration it is concluded that the contractual relationship configured in accordance with Agency Theory prescriptions has been able to utilise contractual specifications to achieve stewardship-like behaviours.

The BOOT concessions were found to have achieved stewardship of the infrastructure providing an informative contrast with the traditional contracts which were found to have not achieved stewardship. Both were long-term contracts, 25 years compared with a total of 17 years, and neither mixed the private company staff with those of the government principal. In the concessions the private companies owned the plants retaining the benefit of their quality of maintenance. In the traditional contracts the private companies did not own the systems and did not obtain any benefits from the quality of the maintenance they carried out. Rather they were rewarded by KPI targets which engendered a literal contractual compliance perspective. At the very least these cases suggest that traditional contracts in a long-term context do not provide the likelihood of stewardship and that the issue of

ownership (albeit subject to withdrawal by the government entity) may be a factor which promotes stewardship of the infrastructure.

The preceding sections have laid out the characteristics of each of the four forms of privatisation from the case studies against the prescriptions of Agency Theory and Stewardship Theory and identified those characteristics which have a causal link to stewardship of the infrastructure being achieved. This thesis now discusses the findings which expand our understanding of underdeveloped aspects of Stewardship Theory, namely, the level or nature of behaviour inherent in stewardship behaviour and the concept of acting in the interests of the principal. A definition of the stewardship behaviour of modern organisations is built using those findings to explicate reasonable expectations as to stewardship by organisations.

6.2.2 Stewardship behaviour

In the previous section this thesis explored the characteristics of the case study examples of forms of privatisation and in so doing also commenced the examination of the behaviours of the agent or steward. This section builds on that work and discusses the findings as to the behaviours for the purpose of extending the literature in relation to what constitutes stewardship behaviour. Firstly, the findings as to stewardship behaviours are unpacked to understand the difference in the behaviour between case studies and the ways in which the behaviour in relationships with Stewardship Theory characteristics is different from (or similar to) that of relationships having Agency Theory characteristics. Secondly, the findings which clarify and develop the meaning of acting in the interests of the principal are discussed with the objective of expanding the understanding of this Stewardship Theory (Davis et al., 1997) concept. Thirdly, the outcomes of the discussion are brought together in a definition of stewardship behaviour of modern organisations for the purpose of providing scholars and practitioners with a clear understanding of the behaviour which can be reasonably expected, and which results in the better stewardship of critical infrastructures.

Earlier in this thesis the terminology used in Agency Theory and Stewardship Theory in respect of the behaviour of the agent or steward towards the principal was unpacked. The most aspirational behaviour of Stewardship Theory — acting in the interests of the principal — was portrayed by Stewardship theorists to offer something more than the contractual compliance which is the aspiration of Agency

Theory. The problem then is identifying what this ‘something more’ is in the context of both theories prescribing contractual compliance. These possible behaviours prescribed by the theories have been applied to the findings from the four case studies with the results summarised in Table 6.2. The findings are discussed in detail with the preliminary observation that in no case study was there *not contractual compliance*.

Table 6.2 Behaviours of agents or stewards

Form of privatisation	Agent/Stewards behaviour	Applicable theory
Alliance, joint venture, BOOT concession	Contractual compliance and acting in interests of the principal	Agency Theory
Traditional contract	Contractual compliance, but acting against the interests of the principal	Agency Theory
None	Not contractual compliance	Agency Theory

6.2.2.1 Contractual compliance

Contractual compliance, as minimum behaviour, was found in each of the four case studies. However, in the early alliances case study contractual compliance was found to have a negative connotation and in the other three case studies to be accompanied by stewardship-like behaviours. The early alliances were traditional contracts, with the principal’s informants advising that at least one of the early alliances focused on the KPIs to achieve bonus payments rather than acting in the interests of the principal by providing adequate service to the customer. The RFP (2011) for the single NG Alliance to replace the early alliances revealed that the principal believed that there were ongoing instances of the alliances acting against the interests of the principal. Examples were: there not being a strong cooperative focus, lack of alignment of goals and lack of collective responsibility for outcomes. Having regard to those data this thesis found that in the early alliances, which were configured in accordance with Agency Theory prescriptions, the behaviour was no

more than contractual compliance and the agents did not act in the interests of the principal.

Whilst this evidence of the agent not acting in the interests of the principal confirms the conventional Agency Theory conceptualisation of the parties being opposed in their goals the findings do not assist in understanding whether stewardship behaviour of acting in the interests of the principal, as claimed by Davis et al. (1997), sits within the concept of contractual compliance or is beyond, or something more than, contractual compliance.

6.2.2.2 Acting in the interests of the principal

The conceptualisation of the steward as acting in the interests of the principal is a major tenet of Stewardship Theory (Davis et al. 1997, p.24; Donaldson, 1990, p. 377; Van Slyke, 2007, pp. 164-165). This research sought to develop knowledge of what constitutes acting in the interests of the principal, specifically whether there was any upper limit upon the extent to which the steward would act in the interests of the principal. This was particularly important as Stewardship Theory literature is notable for its focus upon the human services arena where the steward, typically an individual, enters the contract already highly motivated to benefit the recipient of the services, for example homeless youth. Davis et al. (1997) conceptualised the steward's actions saying a steward "...will not depart from the interests of his or her organisation" (p. 29) and Van Slyke (2007) asserted that a steward "...makes decisions he/she perceives to be in the best interests of his/her principals" (p. 165). These conceptualisations are offering something more than that expected of an agent and hint of the dedication and service, and the preparedness to go the extra mile for deserving individuals which characterise the human services. This research proceeded on the basis that these conceptualisations were possibly unrealistic in the context of the steward being a for-profit organisation and sought out examples of extraordinary actions; that is, instances where the steward went the extra mile, perhaps making a contribution for which they would not be compensated.

Unpacking the data from the archival study and questioning in the interviews the evidence was that The Alliance, Joint Venture and BOOT case studies were configured in accordance with Agency Theory and the agent entities displayed stewardship-like behaviours such as acting in the interests of the principal. No examples of the private entities doing anything exceptional or extraordinary that

might incur cost that could not be recovered from the principal were found. The questioning also revealed that no principal expected any act of extraordinary stewardship. The government entity informants in all four case studies put the perspective that as the relationship was commercial there was no expectation that the private companies perform any extraordinary acts but rather that contractual requirements in two of the case studies removed the option of such action. The Alliance agreement requires that all decisions must be unanimous and must be made in the interests of The Alliance and not any one participant. Government entity informants explained that rather than expect private participants to act to their own detriment the government entity would use the mechanisms in the agreement, for example annual adjustment of performance targets and the Agency Theory prescription of financial incentives, to focus the private participants on activities which are in the best interests of the principal. The Joint Venture was limited by the governance mechanisms and ownership arrangements, having to put all proposed actions to the governance board for a decision. The 50% ownership by the principal, the funding coming from the principal, and the principal having extraordinarily strong representation on the governance board precluded the Joint Venture from having any discretion to take any extraordinary actions.

This finding that no steward entity had performed any extraordinary act and that the principals had no expectation that they do so, sets an upper limit to the meaning of the term acting in the interests of the principal. The lower limit of the behaviour of the steward is one in which the literature is silent. Where the case studies demonstrated stewardship of the system the behaviour of the agent was that of continually acting in the interests of the principal. Accompanying that, acting in the interests of the principal was the agent fully complying with the contract. In summary, findings indicated that The Alliance, Joint Venture and BOOT case studies were configured in accordance with Agency Theory prescriptions and the agents displayed the stewardship-like behaviour of acting in the interests of the principal whilst doing nothing more than complying with the contract. This finding is highly important as Stewardship theorists (Davis et al., 1997; Van Slyke, 2007) had asserted that Agency Theory characterises the agent in the normative model as acting against the interests of the principal.

This thesis has now found that The Alliance, Joint Venture and BOOT forms of contractual relationships which were configured in accordance with a relaxed Agency Theory model (Eisenhardt, 1989) have supported or created the stewardship-like behaviour of acting in the interests of the principal. Having established that the stewardship-like behaviour of acting in the interests of the principal was achieved within contractual relationships which were configured in accordance with Agency Theory and that these contractual relationships achieved stewardship of the critical infrastructures it is important to understand what constitutes acting in the interests of the principal.

The terminology regarding acting in the interests of the principal has varied over the years since Stewardship Theory first emerged. Donaldson and Davis (1991) referred to executives as stewards "...motivated to act in the best interests of their principals." Davis et al., (1997) asserted that "...a steward's behaviour will not depart from the interests of his or her organisation." Van Slyke (2007) asserted that a steward, amongst other things, "...makes decisions he/she perceives to be in the best interests of his/her principals..." (p. 165). Explaining why the steward would not depart from the interests of the principal Davis et al., (1997) said "even when the interests of the steward and principal are not aligned, the steward places higher value on co-operation than defection." (p. 24).

The case study where the private entities were found to not act in the interests of the principal, the early alliances, provided valuable, publically-stated examples of the behaviour of the agent. The government entity in its RFP (2011) said measures taken by the early alliances to achieve cost reduction sometimes resulted in increased cost elsewhere, there not being a strong cooperative focus, lack of alignment of goals, and lack of collective responsibility for outcomes. As discussed previously, the evidence was that the private companies had focused on bonus payments to the detriment of quality of service to the customer. Taken collectively Case Study C provided rich and deep evidence of what constitutes acting against the interests of the principal.

The findings as to stewardship-like behaviour from the case studies where the stewards were acting in the interests of the principal (The Alliance, the Joint Venture and the BOOT concessions) are now discussed. Five of the informants had had a significant role in establishing the case study contractual relationship and this

was apparent in the rich, conceptual language they chose to describe the relationship and the role of the agent. The private participant informants described (and the government entity supported) the conduct of the agent as highly values-driven for example honesty and integrity, accompanied by behaviour such as cooperation and collaboration and doing what is best for the partnership they share with the principal. Informants depicted a long-term perspective on the part of the parties with the agents genuinely putting the interests of the principal first over the interests of their own organisations. Cooperation was a term that emerged often, with the BOOT case study data providing evidence that the private and government entity informants distinguished between cooperation and collaboration. In respect of the large filtration plant the discussion regarding cooperation flowed into the shared research activities, with both government entity and private operator informants using terms such as collaboration and partnership.

An informant from the operator of the two small filtration plants took an expansive perspective, observing that his company provided many services to the government entity, for example the operation of a desalination plant, and O&M of waste treatment plants. He explained that his company not only always met the terms of the contract but also “...see ourselves as an extension of the client...”. This conceptualisation of the agent is a powerful way of depicting an alignment of goals and actions that is so complete that, to the external observer, there is no discernible divergence between the principal and agent on goals or actions. This concept will assist the development of the Stewardship Theory literature not only by its power to describe the alignment of the two parties but also as a counterpoint to the conventional Agency Theory conceptualisation of the agent having different goals and acting against the principal.

Drawing these findings from all four case studies together, two strong threads of concepts emerged, namely: the sharing of goals and objectives, and the intense focus on ‘cooperation’ and ‘collaboration’. Both these threads of behaviours resonate strongly with the conceptualisation of relational contracts. Relational contracts resulted from the parties seeking to avoid the costly adversarial (Agency Theory) relationships common to traditional Agency Theory contracts which were incomplete in that the nature of the output or externalities precluded the writing of a contract that covered every eventuality (Walker & Hampson, 2003). The incomplete

nature of the contract led to conflict between the parties who responded by adopting longer-term relationships supported by relational contracts which were characterised by trust and the pursuit of common goals (Waterhouse et al., 2011). Thus adoption of relational contracts presents an example of a response to the conventional Agency Theory model not being adequate and something more (by way of focus upon relationships) was needed and created. Reflecting upon the Stewardship Theory literature and case study findings on the one hand and the underpinning characteristics of relational contracts on the other, it is apparent that there is a strong congruence between the behaviour of acting in the interests of the principal and the behaviour of the agent conceptualised in relational contracts. Yet only The Alliance was configured in accordance with the prescriptions of a relational contract, suggesting the possibility of the concept of acting in the interests of the principal being more pervasive and operating in a broader range of contractual relationships beyond the relational contract alone.

The threads of concepts found in the literature and the water service case studies — shared goals and a focus on cooperation — are assembled for the purpose of defining the behaviour of the steward as follows:

1. The goals and objectives of the steward must be aligned with those of the principal so that there are shared goals and objectives, and that the steward is expected to continually, proactively seek that alignment.
2. The behaviour of the steward towards the principal is to be cooperative with the possibility of interdependency and collaboration if that is the required relationship.

6.2.2.3 *Definition of stewardship behaviour*

Whilst the case studies were found to be configured in accordance with Agency Theory, not Stewardship Theory, all case studies provided a substantial body of findings regarding the behaviours expected of a steward. Turning first to the findings as to the agent integrating its goals with those of the principal, the key findings from the case studies were that there was both a requirement by the principal that the goals and objectives be aligned and shared, and an understanding between principal and agent that the agent would proactively and continually seek to build that alignment. Those findings are highly important as they confirm the core

Stewardship Theory tenet that “...a steward’s behaviour will not depart from the interests of his or her organisation (the principal)” (Davis et al., 1997, p. 24) establishing a base for further development of Stewardship Theory. The findings go further to both identify that the alignment or sharing of goals is a requirement of the principal, and to provide a practical example of the behaviour of the organisation as steward; that is, that the steward must continually refresh its understanding of the principal’s goals and objectives and in turn adjust its activities to align with that fresh understanding. This proactivity in aligning towards the objectives of the principal contrasts vividly with the stereotypical Agency Theory conceptualisation of the agent continually acting opportunistically and diverging from the goals of the principal. Put simply, this research has positioned the proactivity of the steward on behalf of the principal as the key point of differentiation between the steward and the typical agent as conceptualised in the normative Agency Theory model.

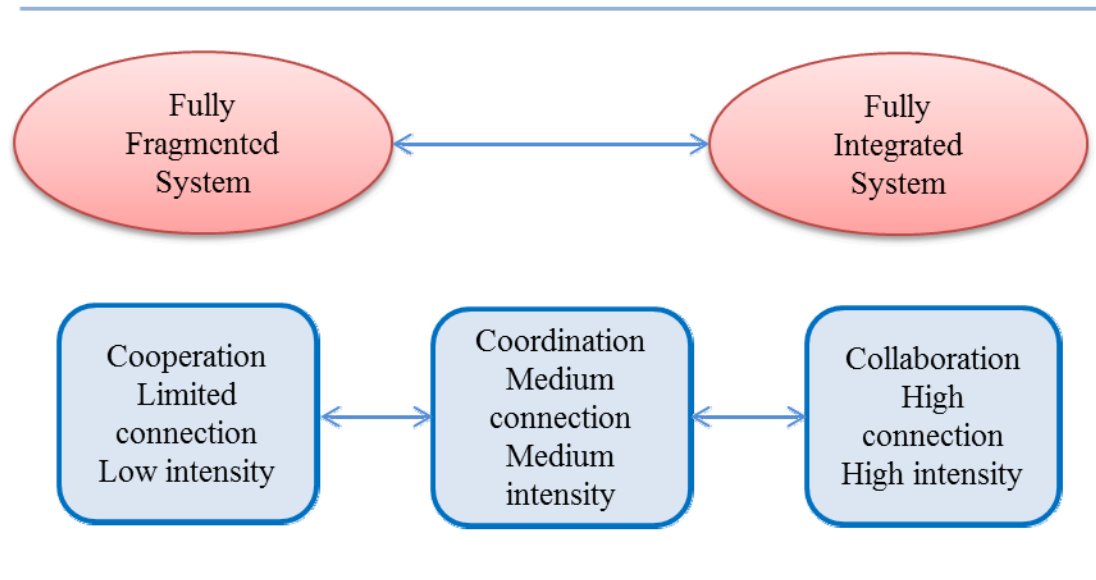
The steward’s continual realignment of its activities is highly important to the second thread of the findings, the strong requirement for cooperation and the achievement of collaboration, where that closer alignment was required. Davis et al., (1997) in their seminal Stewardship Theory work had asserted that “...even when the interests of the steward and principal are not aligned, the steward places higher value on co-operation than defection” (p. 24). In that way the cooperation feeds the alignment and the closer alignment facilitates the cooperation. However the findings of the water system case studies, providing evidence as to partnership, cooperation and collaboration suggest that there is a need to further unpack the high-level conceptualisation of ‘cooperation’ and ‘cooperative behaviours’ which Davis et al., (1997) used as a counterpoint to ‘defection’ and ‘self-serving behaviours’.

The terms cooperation, coordination and collaboration have typically been used interchangeably in the broader literature to describe a concerted effort to achieve common goals (Keast et al., 2007). Yet Keast et al., (2007) distinguished between the terms bringing clear meaning to what are quite different activities directed at achieving quite different objectives. Distinguishing between the terms is highly important, as according the same meaning will invariably obscure the concept intended by the informant or author.

Having made specific the meaning of each term Keast et al., (2007) then placed each term along a continuum from cooperation, through coordination to

collaboration to depict the rising intensity of the integration of the activities of the parties to the relationship and the related concept of the degree of formality or (informality) that governs relationships. The continuum adopted by Keast et al., (2007) is set out in Figure 6.1.

Figure 6.1 Horizontal Integration Continuum

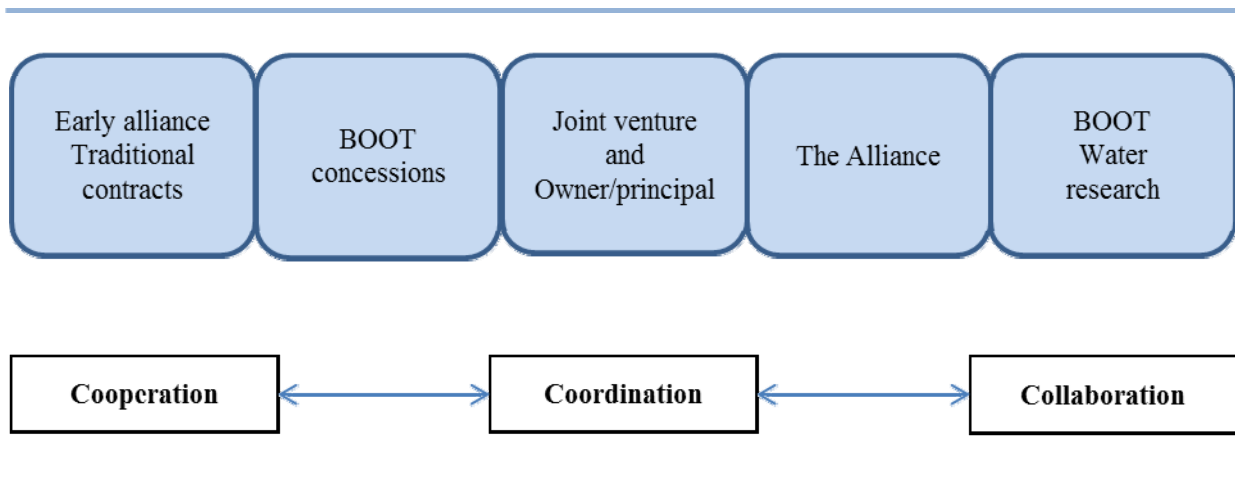


Source: Keast et al., (2007)

The power of this continuum is the rigor it brings to the differentiation between the meanings intended when terms are used, for example cooperation and collaboration. Cooperation is defined by Keast et al., (2007) as being about taking others into consideration, compromising and being accommodating without necessarily adjusting individual goals. Coordination is about bringing together independent parts into an ordered relationship to produce a whole characterised as a more enduring system of relationships between different components of a larger system. Collaboration is a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their limited vision of what is possible.

Applying the Horizontal Integration Continuum to the case study findings the nature of the relationships in each case study can be understood and the behaviour of the agent can be established to inform the development of a definition of the organisation as steward. The behaviour between the parties in each contractual relationship is depicted in Figure 6.2 by allocating each contractual relationship to the appropriate place on the continuum.

Figure 6.2 Relationships between parties to case study contracts



In The Alliance, Joint Venture and BOOT case studies the relationships were more than cooperation, showing clear evidence of enduring systems of relationships characteristic of coordination and in limited instances, collaboration (Keast et al., 2007). The BOOT concessions had the least coordination, with the relationships being characterised by each party carrying out their role with a relatively low level of integration with the other and the connections being formally structured and relatively few in number. In contrast, the BOOT water research activities were depicted as intensely integrated with those of the principal with extensive connections between virtually all the staff involved, providing an example of close collaboration. The relationships in the early alliances, where the relationships were configured in accordance with the normative Agency Theory model and at least one private company was found to have acted against the interests of the principal, had not proceeded far along the cooperation/collaboration continuum. The relationships were cooperative but the ambition of coordination was not fully realised.

This evidence from these case studies, and the continuum of behaviour established by Keast et al., (2007), both suggest the need to revisit the earlier use of the term ‘cooperative behaviours’ by Davis et al., (1997), who asserted “A steward will not substitute or trade self-serving behaviours for cooperative behaviours” (p. 24). In that context ‘cooperative’ is used as a counterpoint or contrast to ‘self-serving’ and would be expected to encompass not only the meaning attributed by Keast et al., (2007) — that is, i.e. about being accommodating without necessarily adjusting individual goals — but also the sharing of goals characteristic of

Stewardship Theory behaviour (Davis et al., 1997; Van Slyke, 2007). Coordination as defined by Keast et al., (2007) in the inter-organisation context, with its bringing together of independent parts to produce a whole characterised as a more enduring system of relationships, describes the water service case study relationships. Collaboration, where parties constructively explore their differences and search for solutions, describes the relationship between the members of The Alliance in the project to replace a sewer main and the ongoing research into improved drinking water treatment in the BOOT concessions. In summary, the case studies clearly indicate that stewardship behaviour reflects a relationship which is characterised by, at the very least, coordination and in some circumstances collaboration, with cooperation alone not being a characteristic of stewardship behaviour.

This research has found that the agents in the water case studies, by acting in the interests of the principal, displayed behaviours which go to the essence of an organisation that is a steward, notwithstanding that the contractual relationships were not configured in accordance with Stewardship Theory. The behaviours encompassed the proactive alignment by the agent of its goals with those of the principal and the contribution to relationships which are characterised by coordination and sometimes collaboration with such behaviour always being more than mere cooperation. For that reason, and to obviate any perception that behaviour at the level of cooperation in its own right amounts to stewardship behaviour, this thesis does not include the term ‘cooperation’ in the following definition. This definition is developed to extend and better explain the seminal conceptualisation of stewardship established by Davis et al., (1997), that “...a steward’s behaviour will not depart from the interests of his or her organisation (the principal).” (p. 24). In addition this definition explicates the reasonable expectation of organisations as stewards.

Stewardship behaviour:

The steward organisation acts in the interests of the principal, coordinating, or collaborating with the principal to achieve the goals and objectives of the principal. The steward continually seeks to integrate the goals of the steward with those of the principal and will not act against the interests of the principal.

6.3 IMPORTANCE OF SENSE OF RESPONSIBILITY

In *Section 2.4 Conclusion* it was concluded that, of the factors that had been identified in Stewardship Theory (Van Slyke, 2007) as contributing to an agent acting as a steward, sense of responsibility was important to the steward acting in the interests of the principal and offered the possibility of being essential to stewardship behaviour. If sense of responsibility were to be demonstrated as essential or highly important to there being stewardship behaviour then governments seeking better stewardship of critical infrastructures could require contractors to have that attribute and also focus on the actions which increase that sense of responsibility. The literature in respect of sense of responsibility was found to be underdeveloped.

This thesis first discusses how important sense of responsibility was in terms of the causal link between sense of responsibility and stewardship-like behaviour and identifies the impact of the findings as to the motivation of agents to act with a sense of responsibility upon Stewardship Theory and Agency Theory. Second, the findings are examined through a second lens: that of the principal, as there is a strong possibility that principals may, in certain circumstances consider that sense of responsibility is essential. Third, this thesis then explore the unanticipated findings of the Stewardship Theory attribute sense of responsibility operating in relationships configured in accordance with Agency Theory.

6.3.1 Causal link to stewardship

This section first discusses the findings from all case studies as to the link between sense of responsibility and stewardship behaviour and develops conclusions as to the importance of sense of responsibility to there being stewardship behaviour. Then, the findings as to the nature of the motivation within agents to act with a sense of responsibility and factors which impacted on that motivation are analysed.

The case studies where sense of responsibility was found are first considered, followed by the findings from the early alliances case study where sense of responsibility was inadequate will be discussed. In *The Alliance* it was concluded that sense of responsibility was highly important to the stewardship of the water service. Indeed it was reasoned that it would not have been possible for the private companies to have delivered the significant benefits that were demonstrated if the companies had not had a very strong sense of responsibility to the principal. An

example was the difficult water mains project in an iconic shopping precinct conducted over several years. If the companies had not continually acted with a sense of responsibility then various technical and community relations challenges would have been left unresolved and there would have been no stewardship of that part of the water service. Whilst that line of reasoning would suggest that sense of responsibility was essential the extent of the evidence only supported a finding that sense of responsibility was ‘highly important’. Similarly, the Joint Venture provided clear evidence of a very strong sense of responsibility but having regard to the strength of the evidence it was found that sense of responsibility was ‘highly important’ rather than essential. The determination of whether sense of responsibility was essential to there being stewardship in the BOOT case studies proved more straightforward because of the criticality of the output. The provision of safe drinking water is the inviolate goal of the principal. Consideration of the sense of responsibility demonstrated by the operator of the large water filtration plant in response to the water contamination events drove the conclusion that it was essential that there be sense of responsibility to the principal on the part of the filtration plant operator for there to be stewardship of the drinking water.

Turning to the case study where sense of responsibility was not found, the early alliances, there was not an adequate sense of responsibility to the principal. Only limited stewardship was found. The evidence which led to the finding that there was an inadequate sense of responsibility was primarily that of the State Corp. informants: the early alliances’ focus on the KPIs and not on customer service, and the RFP (2011) where the principal revealed publicly the defects in the early alliances’ contractual relationships. The RFP (2011) shows that the principal has been prepared to say that the arrangements applying to the early alliances “...have not always encouraged a strong co-operative focus on business improvement” and that there was a “...lack of alignment of goals and objectives...and...collective responsibility for outcomes...”. This thesis took the approach that this language was conveying the meaning that there was not a sense of responsibility and that that defect, and others, in the contractual arrangements had led to stewardship of the service not being achieved. Further, the principal went on to spell out its ambition to achieve stewardship seeking “...further and ongoing business improvement in a way that maintains high standards of service within budgetary constraints (RFP, 2011,

p31). This thesis concluded that this language was describing stewardship of the service but required an ongoing behaviour on the part of the new contracting company. For that reason this thesis found that the government entity saw a very strong link between sense of responsibility to the principal and stewardship behaviour.

Bringing those findings together The Alliance and Joint Venture provided evidence that sense of responsibility was highly important and the early alliance case study provided strong evidence that the dissatisfied principal was of the view that there was a very strong causal link between there not being a sense of responsibility and there not being stewardship behaviour. The principal's actions of abandoning the form of contractual relationship led to the finding that sense of responsibility was essential. A further dimension to sense of responsibility was revealed in the BOOT water filtration case study where the finding was that because of the criticality of the outcome of the relationship, safe drinking water, there was a strong link between sense of responsibility and stewardship behaviour required of the agent companies — so strong that the attribute was judged essential.

Having established that sense of responsibility was, at the least, highly important to stewardship behaviour the question then is what does this finding of such a strong causal link mean in the context of Stewardship and Agency theories. Stewardship Theorists, Davis et al., (1997), Dicke (2002) and Hernandez (2012) have established that there are both situational factors (structural aspects of the relationship and extrinsic rewards) and psychological factors (higher order needs and intrinsic rewards) which, if emphasised, increase the motivation of the agent to act as a steward. This thesis continues that distinction between factors, examining first the structural arrangements and extrinsic rewards which operated once the contractual relationship had commenced and then the beliefs or values which were inherent within the individual or organisation before they entered into the contract.

The findings that sense of responsibility was increased or impacted by the structure of the relationship and extrinsic rewards is congruent with (and further develops) the tenet of Stewardship Theory, that "...the performance of a steward is affected by whether the structural situation in which he or she is located facilitates effective action...Structures that facilitate and empower rather than those that monitor and control" (Davis et al., 1997, p. 25). All The Alliance informants were

consistent in the view that the annually adjusted KPIs and linked financial incentives engendered sense of responsibility. However, financial incentives and other extrinsic rewards as motivation for the agent to pursue the goals of the principal is a core tenet of Agency Theory (Jensen & Meckling, 1976), reinforcing the conclusion earlier in this thesis that The Alliance, which was characterised by highly structured performance indicators and rigorous monthly reporting against indicator targets, was configured in accordance with Agency Theory. In the Joint Venture, the informants invariably explained that sense of responsibility was caused by, amongst other things, 50% ownership by the government entity and the Joint Venture's tight alignment of its coverage with a single community. In the early alliances the government entity had resolved that the private companies had displayed inappropriate behaviours driven by organisational characteristics, for example not being aligned with the government entity goals and not joining in a collective responsibility for outcomes. The government entity adopted the structural remedies of mixing staff from both participants and increasing in the scope of the NG Alliance to include organisational elements of the government entity. Many more structural factors which were found to impact upon sense of responsibility are discussed in *Section 6.4 Actions to increase sense of responsibility*.

The findings as to the beliefs or values which were inherent within the individual or organisation before they entered into the contract built on the conceptualisation of Dicke (2002), that the steward has an internal sense of responsibility to the principal which is closely allied with an individual's personal conscience, values or loyalty. For Dicke (2002) this sense leads to the steward acting accountably and achieving the principal's goals. Other than the concept built by Dicke (2002), Stewardship Theorists have not, to date, explored the issue of whether stewards come to the relationship with a predisposition to act with a sense of responsibility. Indeed Stewardship Theory (Davis et al., 1997; Hernandez, 2012) focuses on the application of intrinsic rewards within the relationship, once established. Similarly, Agency Theory has not contemplated the circumstances whereby an agent might enter the relationship with a predisposition to act with a sense of responsibility but rather has conceptualised the agent as not having a sense of responsibility to the principal.

The issue of whether agents or stewards enter the relationship with the capability and intent to act with a sense of responsibility is highly important, because if there was evidence that agents or stewards had been recruited with this responsibility attribute and behaved as a steward then government entities seeking to achieve stewardship could make future selections of organisations who possess that attribute.

The evidence as to the organisations as agents having values and their own sense of responsibility was demonstrated most eloquently by The Alliance informant A5, who explained his company's belief system as "...being honest, acting with integrity and making sure everything you do is genuinely for the best of the alliance...". For the BOOTs there was significant evidence that the two water filtration plant operators have conducted themselves with a strong sense of responsibility and that the companies are each driven by both a very strong sense of responsibility to the public as suppliers of safe drinking water and the jealous protection of their international reputations. This sense of responsibility directed to the public was found to not conflict with sense of responsibility to the principal. The concept of an organisation having an inherent sense of responsibility at the commencement of the contractual relationship was pivotal in the Joint Venture, where the informants attributed the very strong sense of responsibility of the Joint Venture being comprised of a critical mass of long-term water industry staff. The staff had worked for the current government entity (and its predecessors) before all were transferred to the Joint Venture. Evidence was put by the informants that the sense of responsibility of staff is directed not only to the principal but also to the local community. In the early alliances, private company informant C6 revealed a strong personal sense of responsibility for providing a community's water service (or to the water industry) as distinct from responsibility to the government entity. This sense of responsibility directed to the community was found to support the agent having a sense of responsibility to the principal, as the individual employees within the water system demonstrated the internalised desire to protect the water system conceptualised by Hernandez (2012, p. 182) as "psychological ownership". Hernandez (2012) believes this attribute or objective is the central function of the operation of stewardship behaviours within and across an organisation. Accordingly, both the organisations and the employees which comprise the organisations

demonstrated a sense of responsibility which is driven by factors external to the contractual relationship. The organisations brought to the relationship a sense of responsibility based on their company values and desire to protect the company reputation. The individuals brought a sense of responsibility based on their prior experience of working in the water industry. The broader impact upon sense of responsibility from the private company engaging employees with long-term experience in the water industry and from government contracting with private companies known to have a sense of responsibility is considered in greater detail later in this section.

In summary, this thesis found that sense of responsibility was, at the very least, highly important to stewardship-like behaviour of the agents and that the motivation of the steward to act with a sense of responsibility could be attributed to a number of factors. The factors fell into two groups: one, the structural arrangements and extrinsic rewards which operated once the contractual relationship had commenced; and the other, the beliefs or values which were inherent within the individual or organisation before they entered into the contract. The structural arrangements, for example the mixing of staff from each party to the contract and the extrinsic rewards such as incentive payments linked to the achievement of KPI targets, provided clear evidence of how sense of responsibility can be promoted within a relationship where the agent or steward is a private company and the principal a government entity. The findings that extrinsic rewards led to sense of responsibility to the principal are highly important to both Stewardship Theory and Agency Theory. Proponents of Agency Theory had argued that the agent does not have a sense of responsibility and therefore requires controls and incentives, whereas proponents of Stewardship Theory had espoused that sense of responsibility was one of the key factors that promoted stewardship behaviour. The absence of a case study where the relationship was configured in accordance with Stewardship Theory results in there being no empirical evidence to allow this thesis to directly go beyond the scope of the literature to date to establish findings in respect of the operation of sense of responsibility in the Stewardship Theory context. Yet the rich data in respect of relationships configured in accordance with Agency Theory might be combined with the Stewardship Theory literature knowledge to establish propositions as to the operation of sense of responsibility in the Stewardship Theory context of the steward.

The findings that sense of responsibility to the principal can be possessed by the individual or organisation well before they enter into the contractual relationship built on the conceptualisation by Dicke (2002) and established a complement to the existing Stewardship Theory, which has to date focused on how sense of responsibility is engendered within an established contractual relationship (Davis et al., 1997; Hernandez, 2012). This is highly important as individuals and organisations can be recruited against the criteria of sense of responsibility for the purpose of achieving better stewardship, irrespective of whether the contractual relationship is configured in accordance with Agency Theory or Stewardship Theory.

This discussion has focused upon the importance of sense of responsibility to there being stewardship behaviour and upon the motivation within the steward to act with a sense of responsibility. The next section discusses how important the principal considers sense of responsibility to be.

6.3.2 Sense of responsibility from the principal's perspective

This section discusses how important it is to the principal that the agent or steward has a sense of responsibility to the principal.

In The Alliance, the Joint Venture and the BOOT concessions stewardship of the service was achieved and the principals were found to have an unequivocal expectation that the agent have a sense of responsibility to the principal. In The Alliance it was found that the contract documents both specified goals and objectives for the stewardship of the water service by way of the financial incentive system and set requirements as to the behaviour of the private participants which constituted sense of responsibility. Contractual terms specifying that Alliance decisions be unanimous, 'best for alliance' and 'for the benefit of all parties' effectively position all participants, including the private companies, to act with a sense of responsibility to the principal. Having regard to that evidence it was concluded that for the principal sense of responsibility was essential.

In the Joint Venture it was reasoned that the principal having a 50% shareholding in the Joint Venture, and 50% membership of the JGB, was found to give the principal the motivation and means to require sense of responsibility. Having regard to the literature (Professor, 2008) and the informant data it was found that the principal through these governance arrangements did ensure that the agent

acted with a sense of responsibility to the principal and that this sense of responsibility to the principal was, from the perspective of the principal, essential.

The BOOT case study revealed an imperative as to why a principal might mandate that the steward have a sense of responsibility: the criticality of the output of the contract. No evidence was presented that the BOOT contracts specified principles as to decision-making or allowed the principal to specify the behaviour required of the private companies as was found in The Alliance and the Joint Venture. Rather the contracts were focused on outputs, albeit to a highly specified quality. Yet the informants, literature and archival documents revealed an all-pervading focus upon the drinking water being safe. A very strong sense of responsibility to providing that safe drinking water to the principal was found and it was reasoned that the participant could not carry out the purpose of the contract without having a sense of responsibility to the principal. It was found that in the safe drinking water instance it was essential that there be a sense of responsibility on the part of the private companies. This thesis reasons that this finding could be applied to contractual relationships where the output had a similar criticality; that is, that the principal would not select an agent or steward which might not act with a sense of responsibility, nor would the principal accept an agent or steward not acting with a sense of responsibility.

This finding that for the water service principals the agent having a sense of responsibility to the principal was so important that it was essential does not of itself inform the question of whether sense of responsibility is important (or essential) to there being stewardship. However, in each of the case studies where it was concluded that sense of responsibility was essential to the principal it was found that there was also stewardship-like behaviour. It follows then that there was a very strong causal link between the principal requiring that the agent have a sense of responsibility and there being stewardship behaviour on the part of the agent.

It is probable then, that as a minimum the requirement by the principal that the agent have a sense of responsibility has resulted in agents being selected who brought to the contractual relationship a sense of responsibility and who continued to have that sense of responsibility to the principal. This probability is supported by the actions of the government entity in the early alliances case study of formally advising candidate proponents for the single NG Alliance (RFP, 2011) that the suitability of

proposals would, amongst other things, be assessed upon evidence as to the candidate's nominated staff having the behaviours necessary to make the alliance relationship work. As discussed earlier in this thesis there was strong evidence that State Corp. had concluded that there was a strong causal link between there not being sense of responsibility and there not being the appropriate behaviour — stewardship behaviour — on the part of the private companies. State Corp. abandoned the use of the early alliance form of relationship which had not demonstrated a sense of responsibility, signalling that for State Corp. sense of responsibility was essential.

Having established that it is probable that for the principal responsible for critical infrastructures sense of responsibility on the part of the agent or steward is essential this thesis sought to position this finding in the literature. Dicke (2002) had focused on whether an agent's sense of responsibility and shared value sets could be a foundation for the development of accountability methods internal to an organisation, not focusing on the requirements of the principal. Similarly, Hernandez (2012) examined both the actions which influence sense of responsibility and also the operation of sense of responsibility as an antecedent of stewardship behaviour. Hernandez (2012), like other Stewardship Theorists, took the perspective that stewardship behaviour is a desirable objective, and did not address the requirements of the principal. The absence of a case study where the relationship was configured in accordance with Stewardship Theory means that there can be no findings in respect of the principal's requirement as to sense of responsibility in the Stewardship Theory context. However, there may be significant learnings from the case study relationships configured in accordance with Agency Theory that can translate to the Stewardship Theory context. In Agency Theory sense of responsibility as a requirement of the principal has not been specifically addressed, but rather Agency Theory assumes that the agent does not have sense of responsibility and prescribes controls and incentives. Thus Agency Theory has not, to date, established an expectation that the agent will possess the attribute of sense of responsibility. Yet the evidence from the case studies is that it is highly probable that for the principal responsible for critical infrastructures sense of responsibility is essential, extending Agency Theory and raising the strong possibility that in the context of relationships configured in accordance with Stewardship Theory it is similarly highly probable that the attribute is essential.

In summary, sense of responsibility has been found to be seen by principals responsible for critical infrastructures as essential. In each of the contractual relationships where sense of responsibility was found to be essential there was stewardship-like behaviour on the part of the agent. It was concluded that in those case studies it was probable that the requirement by the principal had resulted in contractors possessing a sense of responsibility being selected and, in turn, stewardship-like behaviour demonstrated. Importantly, sense of responsibility was found to be an attribute against which candidate contractual participants can be selected, which in turn demonstrates that sense of responsibility is an attribute which the candidate organisation may bring to the relationship. This finding supports the conceptualisation by Dicke (2002) of sense of responsibility as a sense internal to the individual.

These findings that sense of responsibility is both highly important to there being stewardship behaviour and is an attribute that critical infrastructure principals consider essential direct the thesis towards exploring whether sense of responsibility has more than a strong causal link to there being stewardship behaviour, to explore whether it is a fundamental element of stewardship behaviour.

6.3.3 Sense of responsibility as an Agency Theory behaviour

This thesis initially sought to understand whether sense of responsibility was so important to stewardship behaviour that it is a fundamental element of stewardship behaviour. This course was taken because the Stewardship Theory literature (Davis et al., 1997, Van Slyke, 2007) asserted both that the attribute sense of responsibility was one of the pro-stewardship factors which, if emphasised would cause stewardship behaviour, and that the typical Agency Theory agent acts with self-interest and does not have a sense of responsibility to the principal. The unanticipated findings of this research were that the Stewardship Theory attribute (sense of responsibility) operated in case studies configured in accordance with Agency Theory. As there was no case study configured in accordance with Stewardship Theory the findings redirected the course of the research toward understanding the operation of this Stewardship Theory attribute in relationships configured in accordance with Agency Theory.

The findings were that there was a sense of responsibility to the principal and stewardship-like behaviour in three case studies and in the fourth, the early alliances,

stewardship behaviour was not displayed, nor was there an adequate sense of responsibility to the principal. This evidence led to the conclusion that there is a strong causal link between sense of responsibility and stewardship-like behaviour. Revisiting the findings as to the early alliances not evidencing stewardship behaviour this conclusion was reached having regard to both informant data and data from the RFP (2011) for proposals to replace the early alliances. The evidence encompassed at least one private company acting against the interests of the principal and a lack of alignment of goals and lack of collective responsibility involving both early alliances.

This thesis then contemplated the alternate scenario, where the early alliance private companies acted with the same sense of responsibility as was evidenced in the three other case studies and speculated whether that change would lead to the stereotypical Agency Theory attributes, for example divergent goals or self-interested behaviours being replaced with stewardship behaviours or stewardship-like behaviours. It is reasoned that a sense of responsibility would preclude behaviour such as the companies acting against the interests of the principal, rather the companies would act in the interests of the principal and align their goals with those of the principal. This reasoning runs counter to conventional Agency Theory prescriptions but is consistent with the Agency Theory model where the goals of the principal and agent are aligned (Eisenhardt, 1989).

This finding that sense of responsibility to the principal can be displayed by agents in a contractual relationship configured in accordance with an Agency Theory model demonstrates that this attribute is possessed by both agents and stewards.

In summary, this thesis had identified from the Stewardship and Agency Theory literature that there was a strong possibility that sense of responsibility was so important to stewardship behaviour that it would be the attribute which distinguishes the steward from the agent. Yet the finding from the case studies was that sense of responsibility to the principal can be displayed by agents in an Agency Theory relationship, showing that the sense of responsibility attribute is possessed by both agents and stewards. Clearly there can be no distinction between the two theories on this attribute, suggesting the possibility for Stewardship Theory that sense of responsibility may be no more than one of several factors which contributes to stewardship behaviour. Having established the importance of sense of

responsibility to the achievement of stewardship-like behaviour this thesis now discusses the findings as to the actions which impact on sense of responsibility with the objective of understanding how stewardship of infrastructures can be maximised.

6.4 ACTIONS TO INCREASE SENSE OF RESPONSIBILITY

The case studies revealed actions which increased or supported the sense of responsibility of the agent. The discussion of all the findings as to the importance of sense of responsibility has focused those findings into four strands: configuration of ownership and governance of the steward entity, ensuring suitable participants, clear contractual outcomes and incentives to private participants. These strands of actions are now analysed to understand their impact upon sense of responsibility.

6.4.1 Configuration of ownership and governance

The action taken by governments to configure the ownership and in turn the governance arrangements was found in the case studies to have had the greatest impact upon sense of responsibility when compared to other factors. This section first examines the interrelated matters of ownership of the water system and the configuration of the entities which carried out the O&M roles and in some cases capital works. The governance arrangements and the decision-making rules applied by the governing body are then discussed.

Ownership of the steward entity was prominent in the findings of The Alliance, Joint Venture, and BOOT case studies as a foundation decision on which many of the other attributes which contributed to sense of responsibility are dependent. Yet in each case study ownership was approached from very different perspectives, providing several options as to ownership which promoted sense of responsibility.

With The Alliance the government entity entered into a 10-year contract with a consortium of private companies for O&M and capital works plus works for third parties in the name of the government entity. There is no jointly owned entity, but rather a virtual organisation, The Alliance, and an alliance contract that specifies the terms of the alliance, for example the three parties each carry out the work themselves with the private companies being reimbursed their actual costs, and being paid margins plus rewards based on performance. The relationship was configured in a typical modern alliance form — that is, risk was allocated to the participant best able to bear the risk, each participant entity contributed a significant number of

employees, there is a ‘no-blame’ clause in the contract and all transactions are transparent, and costs and gains are shared between the parties — satisfying the criteria for a true alliance (Davies, 2008) — which in turn falls within the ‘partial divestiture’ category established by Rees (1998). Yet the ownership of the water system remained with the government entity. The government entity chose this alliance form of contractual relationship with the objective, amongst other things, of ensuring a sense of responsibility on the part of the private participants. This approach to ownership allowed the merging of employees from the three entities into a single ‘privatised’ business which achieved stewardship. The Alliance is an example of successful stewardship through privatisation without government ownership of the infrastructure being surrendered.

The Joint Venture ownership arrangements were created in response to intense public opposition to the divestment and privatisation of the water system (Professor, 2008). Tellingly, the public at the same time accepted the privatisation of electricity infrastructure with the sale of electricity assets to a private company (which later sold half its share to a second private company). Two joint venture partnerships were established (one for distribution and one for retail sales), resulting in the government entity owning 50% of each partnership and two unrelated international utilities companies each own 50% of one of the partnerships. The two joint ventures trade under one business name and each is governed by the same board. The government entity has entered into a 20-year contract with the two joint venture partnerships for the O&M of the government-owned water system. This joint venture form of contractual relationship was found to be particularly suited to achieving sense of responsibility and in turn stewardship of the infrastructure, and gaining the benefits of privatisation without government having to surrender ownership of the water infrastructure.

In the BOOT case study the government decided that ownership of the water filtration plants by government was not essential and gave greater weight to the benefits of the agent fully owning the infrastructure; that is, significant savings by way of the specialist expertise and the self-interest of an owner and operator ensuring the best possible design and construction of the plants. In addition the government placed the capital raising and financial viability risks with the private sector. Unlike the previously discussed case studies the government never owned the infrastructures

nor did it own a part of the steward entity. Yet there was a strong sense of responsibility to the principal on the part of the two private plant operators. Whilst demonstrating that this BOOT model was very successful in supporting a strong sense of responsibility and achieving stewardship of a key element of a water system the scope of the case study provided no data to allow consideration of whether this BOOT model could be applied to the wider water service.

Governance arrangements involving board membership and including decision-making rules for the board were found to require sense of responsibility on the part of the steward entity. In The Alliance and the Joint Venture the agents displayed a strong sense of responsibility and were managed by strong governance arrangements, with each principal taking the perspective that it was essential that the agent have a sense of responsibility to the principal. In The Alliance governance is achieved by way of a four-member alliance governance board of which the principal has two members, one of which is the chair. In the Joint Venture the principal has 50% membership of the governing board, and has appointed members from within its own board. Of these three members one is the chair of both the agent and principal entities and another is also managing director of the principal entity. The evidence was that in both cases the principal, through these governance arrangements, ensured that the agent acted with a sense of responsibility to the principal.

Intertwined with the governance board arrangements are rules as to decision-making which the relevant principals stipulated by way of the formal contracts and agreements. In The Alliance the evidence was that contractual requirements that all parties ensure the highest standards of probity, full transparency of all financial and operational matters, and decisions of The Alliance governance board be unanimous and 'best for alliance' fostered a sense of responsibility on the part of the agent. In the Joint Venture the overarching agreement requires that all six Joint Venture Board members (including the three representatives of the two private companies) exercise their powers "in the best interests of the partnerships as a whole" (Professor, 2008, p. 335).

These decision-making rules, together with strong governance control through membership of the governing board, offer examples of contractual terms which the principal can stipulate with a strong likelihood of achieving sense of responsibility on the part of the agent.

The finding is that sense of responsibility can be increased and supported by choices as to the ownership and governance of the entity that carries out the privatised O&M of the infrastructure. The data that supports that finding revealed a significant use of formal risk assessments which led to government retaining ownership of the water infrastructure (The Alliance, the Joint Venture water system, the early alliances) OR not retaining ownership of the water infrastructure (the BOOTs, the Joint Venture electricity infrastructure). This choice of ownership was found to be one of the ways risks were allocated to the various parties to the contract, with the agents in each case demonstrating a significant appetite for risk. This finding showed that the Agency Theory assumption that the agent is risk averse does not apply in the context of the agent being a substantial commercial organisation. In all, a risk-based consideration of the options as to ownership of infrastructure and the entity that operates the system has a high probability of identifying a form of ownership which promotes sense of responsibility and achieves stewardship of the service.

6.4.2 Suitability of private and government participants

Whilst the focus of this thesis has largely been upon the behaviour of the agent or steward the suitability of the government entity and its employees emerged from the data as a factor which impacted upon the sense of responsibility of the agent and in turn the opportunity for the agent to apply that sense of responsibility to achieve stewardship. For that reason this thesis next examines the attributes of the private participants in the privatisations and, in turn, the attributes of the government entity, which impact on the agent's sense of responsibility.

6.4.2.1 Suitability of private participants

Key to understanding how the suitability of private participants drives or delivers agents who bring a sense of responsibility to the contractual relationship is to recognise that the principals, in allocating risk and choosing private participants against criteria to address those water system risks, have effectively made eligible only large, invariably international, companies. This section first discusses the way in which risk considerations impacted on the perspective as to the suitability of participants. Second, the attributes of the private companies which contribute to sense of responsibility, first reputation, then importance of brand and then employee experience in the water industry, are discussed.

The risks addressed by the principals resulted from the scale of operations, specialist capability and the substantial size of funding required to operate and to maintain an urban water service. The standout example was the BOOT water filtration plants where the contract not only required the technical skills to operate the plant but also technical skills to construct the plant and substantial capital to fund construction and ongoing ownership. Another example of risk consideration is The Alliance government entity which obtained legal advice about how risk is treated within an alliance and addressed these in the configuration of The Alliance and the contractual terms (Auditor-General, 2010). Similarly, in the early alliances case study the government entity evaluated all the available models having regard to the different risk scenarios (Development Bank, 2007) and chose the early alliances configuration acknowledging itself as having poor employee management skills and the private sector as strong in employee management. The impetus for the government entity in the Joint Venture case study contracting with large, international companies was the government apprehending the risk inherent in the then upcoming unavoidable participation in the national energy market. Thus the risk to government as a small non-generator electricity supplier drove it to contract with an Australia-wide energy company (Professor, 2008) who has subsequently sold its share in the distribution partnership to an international utilities company.

In all but one case study the selection of a suitable private participant to address these risks resulted in a specialist technical international company being chosen which was found to dictate many of the non-technical attributes — reputation, brand and employee water industry experience — which impacted positively on the sense of responsibility of the private participants. However, before moving to consider the impact of those attributes upon sense of responsibility the opportunity should be taken to compare these findings as to the agent contracting to accept risks against the Agency Theory assumptions that agents are risk averse and that the principal suffers agency loss when contracting with another party (Eisenhardt, 1989; Jensen & Meckling, 1976).

The evidence that agents contract to accept risks that the principal is not prepared to accept directly challenges the Agency Theory (Davis et al., 1997; Jensen & Meckling, 1976) assumption that the agent is risk averse. The acceptance of those risks by the agents, albeit large, well-funded specialist technical organisations,

demonstrates that the reality of the principal/agent relationship where the agent is a successful commercial organisation is that the agent is not risk averse. The Agency Theory and Stewardship Theory literature has, to date, not directly explored appetite for risk of agents who are for-profit organisations, but rather the literature has focused upon the behaviour of the individual as agent (Davis et al., 1997; Jensen & Meckling, 1976). In these water system case studies the agents are highly technically specialised and very large companies, suggesting that the Agency Theory assumption that agents are risk averse is incorrect in the context of organisations contracted to government to operate privatised critical infrastructure. Accordingly, the Agency Theory assumption that the agent is risk averse is found to not apply in the context of the agent being a commercial organisation. These findings point governments in the direction of adopting models of contractual relationships which allow and support the allocation of risk to the extent that the private company has the appetite and capability to accept the risk.

The second Agency Theory assumption to be challenged by the case study findings is that of agency loss; agency loss being where the agent is assumed to never be able to carry out the task as well as the principal could if the principal itself had done the task and that an additional element of agency cost is thus incurred (Donaldson, 1990). The case study evidence was of the principals relying on agents who are more highly skilled and performed better than the principal. This better performance was confirmed by independent assessors, for example the Auditor-General (Auditor-General, 2010) in The Alliance and the Development Bank (Development Bank, 2007) in the early alliances. Thus the early Agency Theory assumption of agency loss has been found to not apply to these water system privatisations and most likely in the broader circumstances of the agent being engaged because of their specialised knowledge and capability. Further, it is highly unlikely that Agency Theory scholars (Jensen & Meckling, 1976) anticipated their assumption of agency loss to be tested in the context of an inter-sector contractual relationship in an era where the state, as principal in contractual relationships with private sector or third sector entities, will be ‘hollowed out’ (Rhodes, 1994), being left without itself having the required skills.

Having discussed the impact of the risk-driven selection of agents who are large international organisations this thesis now turns to the impact of attributes of

those organisations which were found to impact positively on sense of responsibility. The discussion first examines the importance of reputation, then the impact of brand, followed by employee experience in the water industry.

The private company continually seeking to protect its reputation, and its desire to enhance its reputation, was seen by the private company informants to impact very strongly on the sense of responsibility of the company. This strategy on the part of the private companies was consistent with the position taken by Fombrun (1996) in his seminal reputation management work, in which he argued that by developing strong and consistent images well regarded companies create hidden assets that give them a distinct competitive advantage. Fombrun (1996) established 'six pillars' of reputation to which the organisation should pay attention, and against which it can be measured. Two of the pillars are 'emotional appeal' and 'products and services'. It would appear that the private companies acting with a sense of responsibility are seeking to address those two pillars.

The importance of the reputation of the large filtration plant company following the contamination events was a dominant theme in the data, with the findings being that the principal was protected by the operator being intensely motivated to ensure that safe drinking water was seen to be provided — to maintain its international reputation for providing safe drinking water. In The Alliance the enhancement of the reputation of the two private participants was found to be a key motivator for the private company participants to continually take decisions that demonstrated a strong sense of responsibility to the government entity. The private company informants reasoned that acting with a sense of responsibility to the principal would also lead to their gaining additional work, both with the principal and with third parties by way of a business reference from the principal. Whilst no evidence was found that the principals selected agents against a specific 'reputation' criteria or managed the contractual relationship by threatening or enhancing the reputation of the agent (Van Slyke, 2007) it was reasoned that the government entity principals would benefit from contracting with an organisation which had a particularly strong motivation to protect its reputation and would continually assist the agent company to enhance its reputation. This finding is consistent with the findings of Van Slyke (2007) that "...large providers view reputation enhancement as a reward and one that can lead to positive externalities." (p. 177).

The branding of the entity providing the privatised services emerged as a device to achieve sense of responsibility on the part of the steward entity (or negatively impact that sense of responsibility), but with divergent approaches to the use of the concept of brand being equally successful. The governance board of The Alliance suppressed the existing brands of the three alliance participants, including that of the government entity, and created a new single brand. That new single brand was presented to the public on client accounts, signage and uniforms and was found to be a strategy which drew employees from the three entities together in common identification with that brand, leading to a sense of responsibility on the part of those employees.

The brand name of the Joint Venture is a combination of that of the government entity and the first of the two private participants. Because the Joint Venture also retails electricity and electricity is a genuine competitive market it has been necessary to aggressively develop the brand, much more than would be necessary for a monopoly provider of water services. The employees identified strongly with the brand and the informants asserted that this identification with the brand of the organisation led to the employees having a strong sense of responsibility to the principal. This conceptualisation was tested against the broader literature. It was found to align closely with the prescriptions of Social Identity Theory (Ashforth & Mael, 1989) in respect of identification with the organisation. In respect to the benefits to the organisation from the resultant state of commitment/sense of responsibility in the Joint Venture case study this is strongly supported by the Organisational Commitment literature as helpfully summarised by Mathieu and Zajac (1990). It would appear that this identification with the brand of the organisation is reinforcing the sense of responsibility to the Joint Venture, established by factors such as past employment by the predecessors of the Joint Venture, dedication to the water sector, and close alignment with the local community.

In the BOOTs the private operators continued to trade under their respective company's brand, yet each of the two companies and their employees were found to have a strong sense of responsibility to the government entity. In the early alliances the government entity required that the brand names of the two private operating companies be displayed smaller than the accompanying brand or logo of the

government entity. This decision, together with the early alliances being provided with accommodation of a much lower standard than that provided to government entity employees on the same site, were found to have likely diminished the sense of responsibility to the government entity. Accordingly, the evidence is that the clarity and inherent reputation of the brand contribute to the employees of the agent entity having a sense of responsibility, suggesting that the continual enhancement of a brand is an initiative which will increase the sense of responsibility of the agent organisation.

The theme of employees having long-term experience in the water sector was found in all case studies other than the BOOTs and was found to have contributed strongly to the sense of responsibility. The informants characterised the long-term water employees as dedicated and loyal to the water service and the government entity, depicting a career in the water industry as a calling which was accompanied by a commitment to the employer, the water system and the community. This characterisation is supported by the organisational commitment literature (Mathieu & Zajac, 1990); Meyer & Allen, 2007). However, the empirical research of Duffy, Bott, Allan, Torrey, and Dik (2012) found only a moderate correlation between the individual's perception of a calling and job commitment, suggesting that it would be prudent to conduct further research into the contribution of an industry 'calling' to commitment or sense of responsibility in the critical infrastructures sector. The principals used differing arrangements to intentionally position employees with experience of the water service in the privatised entity. In The Alliance a third of the positions were held by current government entity employees. This allowed the government entity to retain the capability to operate the system within its own staff and grew the sense of responsibility of The Alliance employees to the government entity. The Joint Venture is the only water industry employer in the region and all but 30 government entity employees were unilaterally seconded to the Joint Venture. When the early alliances were established all 'day labour' O&M employees were transferred into either of two service companies, each one owned by the successful alliance operator company. The finding across The Alliance, Joint Venture and early alliances case studies was that much of the current sense of responsibility to the government entity on the part of individual employees could be attributed to the remaining core of past government entity employees and

those current government entity employees who are imbedded in the agent organisation.

The learning then is that the sense of responsibility of the agent organisation is impacted by the reputation the agent brings to the relationship, the identification by employees with the brand under which the agent delivers services and the workforce of the agent organisation having a significant proportion of long-term water service staff. If the government entity selects an agent company that relies on its reputation to obtain future and ongoing work in the government entity's industry and the contract puts that reputation at risk if the contract outcomes are not delivered then the government entity can leverage reputation enhancement and risk to reputation to ensure that the agent company acts with a sense of responsibility. Focusing on a single, clear brand, be it the brand of the contracting private company or a brand created for the new entity, was found to enhance the sense of responsibility of employees of the agent organisation. The employment of past government entity employees by the agent entity, or seconding current government entity employees into the agent organisation was found to increase sense of responsibility to the water service and government entity on the part of individual employees.

6.4.2.2 *Suitability of government entities*

Evidence that the capability of the government entity and its employees (who interface with the privatised operations) has a direct impact on the ability of the agents to act with a sense of responsibility to the principal was provided by informants in all four case studies. The findings settled into two themes: the government entity and its employees not recognising that the privatised activities were legitimate operations of the government entity; and the need for the government organisation to be structured and resourced to interface effectively with the privatisation.

The government entity and its employees not recognising that the privatised activities were legitimate operations of the government entity was offered by both government entity informants and private company informants in the early alliances case study as impacting adversely on the sense of responsibility on the part of the agent entities. The evidence was that at the inter-organisational level the government entity's focus was upon cost reduction as distinct from stewardship of the service and

service to the customer. Similarly, it was found that the private companies focused upon KPIs and the resultant bonus rather than quality of service to the customer. In addition there was evidence that human resource policy and practice on topics such as entitlements and discipline were distinctly more favourable for government entity staff. The limited evidence at the interpersonal level was that a sufficient number of government entity employees did not cooperate nor coordinate, let alone collaborate, with the employees of the private companies. Rather, the private informants portrayed the government entity employees as evidencing distrust and seeking to exercise control beyond that which the private company informants judged to be contemplated in the contract. Such distrust and disposition to excessive control suggests an Agency Theory perspective on the part of the government entity employees and is consistent with the prescriptions attaching to the underlying traditional management contracts underlying the early alliances. The principal acknowledged shortcomings of the management contracts and increased the scope of the replacement alliance to minimise the interfaces between the alliance and the government entity (RFP, 2011). The private company informants put forward this then current behaviour on the part of the government entity and its employees as blocking or suppressing their preparedness to act with a sense of responsibility.

Whilst the attribution of certain Agency Theory prescriptions to the government entity and its employees may assist to understand why such an approach was taken there remains the matter of why an Agency Theory relationship was not effective in managing the early alliances which were traditional contracts. It was found that it was highly possible that there was a deficiency in the capability of the government entity to manage contracts generally, and specifically that the outsourcing of the day-to day operation of the water service to the early alliances had resulted in there being inadequate knowledge of the system on the part of the government entity staff managing the contract. In contrast, in the BOOT case study it was found that the capability of the government entity to manage those water filtration contracts was highly effective and that this capability on the part of the principal, with its balance of monitoring and collaboration, assisted the steward companies to act with a sense of responsibility. This capability was widely established in the government entity with extensive outsourcing and close management of procurement and well-resourced contract management. These

findings are highly important to the achievement of stewardship and are directly aligned with the tenets of the contract management literature. Kelman (2002, p. 90) established the concept of the administration of contracts as the 'neglected stepchild' of contract management. Brown and Potoski (2003) in their comparative study of US local governments found that the purposeful investment in the capability and capacity to manage contracts did achieve improved contract performance. For that reason all principals entering into privatisation contracts must consider investment in an appropriate contract management capacity or anticipate a high likelihood of failure.

Sense of responsibility of the private participants was found to be impacted on strongly by both their own suitability and the suitability of the government participant and its own employees. In all case studies but the early alliances the government entity informants evidenced a consistent approach of developing the relationship by continual investment in the alignment of goals, obvious trust and abundant respect. The perspective taken by the government entity informants reflected Stewardship Theory prescriptions. For the private company informants the dedication to the improvement of the water system, the evidence as to continual adjustment of activities to accord with the latest goals and objectives of the government entity, and the sentiment of responsibility to the principal showed that their conceptualisation of their own role was consistent with Stewardship Theory principles. Yet those stewardship-like behaviours were achieved by a relationship configured in accordance with Agency Theory prescriptions. The perspective taken by the participants in the early alliances (which were found to be traditional contracts) was less clear, with the private company informants demonstrating predominantly stewardship-like behaviours and the government entity having a traditional Agency Theory perspective to the early alliances. There was some evidence (possibly topic specific and not universal) of its employees taking a high control, low trust Agency Theory conceptualisation of the relationship. Taken overall the findings from The Alliance, the Joint Venture and the BOOTs were that the private participants had conceptualised their role as a steward, and continually displayed stewardship-like behaviour. The government participants also conceptualised the relationship from a Stewardship Theory perspective, distinguishing these findings as to inter-organisational relationships from those of

Van Slyke (2007), where not-for-profit executive directors were found to be predisposed to adopt Stewardship Theory perspectives but the public managers were predisposed to adopt Agency Theory prescriptions.

6.4.3 Clear contractual outcomes

In each case study the roles, outputs and the outcome of the contractual relationship were exceptionally clear and in each case study the finding was that this clarity or certainty caused the agent entities to act with a sense of responsibility. The clarity was established by a number of factors: the highly specified nature of the outputs, for example drinking water or treated waste water; the very public scrutiny and comparison of performance; the very high level of shared information; and the regular adjustment of performance targets and related incentive payments. The high level of specification of outputs and the publishing of data as to water quality and performance by the National Water Commission, as well as the scrutiny by independent regulators, have been examined elsewhere in this thesis. This section of the thesis discusses the very high level of shared information and how it impacts on an agent's sense of responsibility, followed by the way in which regular adjustment of performance targets and monthly reporting positively impact sense of responsibility.

The sharing of information had as a foundation the data required by contract terms specified by each principal and also information which was shared on an interpersonal basis. The principals were driven by reporting requirements set by external bodies, their ongoing long-term responsibility for the infrastructure, and their immediate responsibility for achieving value for money from public monies. All case studies evidenced the sharing of real-time data as to the performance of key plant. In the three case studies which achieved stewardship of the water systems the unconstrained sharing of information was facilitated by highly professional organisational interfaces that had been established to provide governance, contract management and communication between the principal and the agent. Because the principal (or predecessor) had been custodian of the water service the principals were able to provide the private entities with highly detailed historical data as to significant equipment and performance, for example raw water characteristics. In all four case studies the principal had all the information they required and the agents

were not disadvantaged in respect of any information, indicating that information symmetry had been achieved.

These findings of information symmetry upset the Agency Theory paradigm of information asymmetry, strongly suggesting that, at least in the context of industries such as urban water services or similar major infrastructures, a more accurate conceptualisation of the contractual relationship is one where there is sufficient information for both parties to carry out their roles without the inefficiency of additional controls or distrust caused by an information disadvantage.

The ready sharing of information that characterises information symmetry underpinned the regular adjustment of performance targets, monthly reporting and, in three of the four case studies, incentive payments based on that reporting. Whilst information symmetry was found in the four case studies, sense of responsibility was found only in The Alliance, Joint Venture and BOOTs. The finding in each of those case studies was that these arrangements positively impacted sense of responsibility through the regular negotiation and resetting of contractual expectations in the operational terms applicable to the employees whose responsibility it was to achieve the target outcome. For example, in The Alliance the most recent resetting of performance indicator targets led to more focus on safety and less focus on community; less focus on innovation, and more focus on timely delivery of projects. In the Joint Venture the contract specifies about 160 services, the majority of which have specific quantified targets.

This finding of a causal link between clarity of objectives for the agents and their acting with a sense of responsibility to the principal resonates with the Agency Theory tenet of the need for tight control and incentives driven by closely specified contractual goals. Yet the question is whether this constitutes a strong causal link. In the early alliances case study where the relationship was found to be configured in accordance with Agency Theory prescriptions there was a comparable scheme of KPIs, yet it was concluded that there was not an adequate sense of responsibility. Specifically the finding that sense of responsibility was not adequate was reached because of significant corroborated evidence that at least one of the private companies continually focused on a literal interpretation for the alleged purpose of increasing bonus payments rather than taking a customer service perspective and acting with a sense of responsibility to the principal.

In The Alliance, Joint Venture and BOOTs there was a very clear specification of objectives and the sense of responsibility to the principal was in each case very strong. The arrangements which were found to create clarity of objectives for the purpose of achieving efficiency within the contractual relationship, the long term of the contracts, and intense measurement and frequent reporting from the agent, are discussed in the following paragraphs.

The long terms of the contracts, for example 10 or 20 years offered the possibility of outcomes set at the commencement of the contract not remaining relevant, nor clear as the term progressed. This issue was addressed by contract prescriptions that the principal vary measures (and their targets) at nominated intervals. The shortest interval was 12 months in The Alliance and the early alliances (in The Alliance the variations must be by agreement), and the longest interval was 4 or 5 years found in the Joint Venture. The 4- or 5-year interval was determined by the duration of the price path set by the independent regulator for different services, providing clear but onerous outcomes in that the steward bears the risk for increases in costs such as labour, energy and chemicals. The contractual provisions that allow for a 12-month adjustment or 4/ 5 year adjustment have nicely resolved the perennial contract law "...tension between the need to fix responsibilities at the outset [of the contract] and the need to readjust them over time permeates the long-term contractual relationship" (Baird, 1990, p. 586).

This innovation within the long-term contract is highly important as traditionally long-term contracts have been characterised as adversarial (Walker & Hampson, 2003; Rahman & Kumaraswamy, 2004; Keast, Waterhouse, Brown, & Mandell, 2005) because of the incompleteness of the contract resulting from the difficulty of adequately specifying the outcomes many years beyond the time of executing the contract. The examples offered by The Alliance and the Joint Venture will assist governments and others seeking to obtain services through long-term contracts to utilise the concept of regular adjustment and resetting of targets to bring certainty to the contract and reduce the risk to candidate agents.

This intense measurement and frequent reporting from the steward to the principal could be perceived as Agency Theory controls reflecting a low trust environment (Muth & Donaldson, 1998) and an apprehension by the principal of opportunism on the part of the agent. Yet there was a very high level of trust

extended by the principals in the three case studies where stewardship of the infrastructures was found. In those case studies the agents were found to perceive the measurement and reporting as assisting them to act with a sense of responsibility because of the clarity brought to their role and expected outcomes. No hint of a perception that the measurement and reporting constrained the stewards in acting with a sense of responsibility or achieving stewardship could be found. Put in Agency Theory terms, there was no evidence that any party saw this intense measurement and frequent reporting as a control instituted by the principal because the steward was not to be trusted. Thus the experience of the three case studies where sense of responsibility was found is best described as a variation of the Agency Theory model, where contractual compliance and tight control and monitoring is accompanied by the sharing of goals, and sense of responsibility (as discussed earlier in this chapter) is accompanied by trust.

In summary, clarity of contractual outcomes was held by informants to contribute to sense of responsibility. The clarity was created by the very high level of shared information and the related regular adjustment of performance targets, monthly reporting and incentive payments based on that reporting. These incentive payments are discussed in the following section. The sharing of information established information symmetry and all parties had sufficient information to carry out their roles. The evidence showed that contractual relationships configured in accordance with Agency Theory prescriptions can achieve information symmetry. Indeed the information symmetry in the three case studies configured in accordance with Agency Theory where contractual compliance was found was accompanied by tight control and monitoring, and incentive payments based on regular adjustment of performance targets, intense measurement and frequent reporting from the agent.

6.4.4 Incentives to private participants

Incentives were seen by private company and government entity informants as being strong contributors to the agent acting with a sense of responsibility. The operation of incentives is explained in the following sub-sections.

6.4.4.1 *Financial incentives*

Financial incentives were cited as a motivator of the agent in two of the four case studies and not all the case studies that achieved stewardship of the

infrastructure had a scheme of financial incentives in place. For the informants financial incentives were payment arrangements in addition to, or in place of, conventional payment for services to the specified quality, quantity, timeliness etc., out of which a profit is made.

Financial incentives were found to impact positively on sense of responsibility in The Alliance, where all five informants contended that financial incentives built around the O&M KPI targets and the capital works gain–share/pain–share engendered a sense of responsibility to the government entity by continually focusing the attention of The Alliance upon the specific current interests of the government entity. Very similar financial incentives were adopted by the early alliances government entity after it concluded that existing financial incentives led to the private companies acting in their own interests by their focusing on the KPIs for financial gain to the detriment of quality of customer service.

A further form of financial incentive was found in the BOOT arrangements, where the private plant operators were at risk of a penalty on the water usage charge they made to the government entity; if the water they supplied was below the quality specified in the contract (Mumford, 1996). Yet this penalty regime was not brought forward by the informants when questioned as to what impacted on sense of responsibility. The production of safe drinking water was the dominant focus of the BOOT private operators and whilst the profitability of the overall charging regime may have been an underlying driver of the stewardship outcome it is clear that for the BOOTs sense of responsibility was not driven by financial incentives.

Similarly in the Joint Venture there were no financial incentives in addition to the payments for the provision of the services to the specified targets. Informants saw sense of responsibility as being created or harnessed from a range of factors such as ownership by the government entity, past employment by the predecessors of the government entity, and close alignment with the close-knit local community, but never suggested that the Joint Venture would be motivated by financial incentives. Yet sense of responsibility, and in turn stewardship of the infrastructure, were abundant.

Such incentive payments are prescribed by Agency Theory (Eisenhardt, 1989; Jensen & Meckling, 1976) to reduce the self-interested behaviour of the agent and to minimise goal divergence. The Joint Venture and BOOT forms of

privatisation achieved stewardship-like behaviours, for example acting in the interests of the principal, and the contractual relationship was configured in accordance with Agency Theory. Neither case study utilised financial incentives such as were held by The Alliance informants to create sense of responsibility, suggesting that financial incentives in addition to conventional payment for services out of which a profit is made are not mandatory for the achievement of sense of responsibility but rather are a mechanism that may be adopted in concert with other mechanisms such as the adjustment of KPI targets. An additional perspective is that collectively the evidence from the three case studies where sense of responsibility was evidenced is that the traditional Agency Theory extrinsic reward of profit or the performance-linked highly profitable incentives of The Alliance have a significant causal link to sense of responsibility.

In summary, Agency Theory contractual relationships where the agent is a for-profit organisation can utilise financial incentives to achieve sense of responsibility which in turn leads to stewardship-like behaviour.

6.4.4.2 *Term of contract*

A longer-term contract was found to be very important to private informants and was recognised by some government entity informants as an incentive which was highly likely to lead to the agent acting with a sense of responsibility. The terms of the contracts in the case studies were about 10 years, 20 years, 7 years and 25 years, which were seen by the private companies and their shareholders as very attractive when compared with construction contracts which were typically 2 to 3 years. The longer term of water industry O&M contracts allowed the private companies to establish their operations and then progressively achieve efficiencies in subsequent years leading to a significant profit across the whole contract term. The private companies could enter into longer-term contracts for the supply of materials and energy, and enter into longer-term bargaining agreements with unions and employees which facilitated the reduction and control of costs. The contracts typically do have provision for extension and this was seen as an incentive for acting with a sense of responsibility and for high quality performance.

Contract law faces the dilemma of, on the one hand, offering a means of commitment and, on the other, allowing for sufficient flexibility to adjust to changes in the environment. Particularly with long-term contracts there is a need for the

contract to specify outcomes which are relevant at the time (any time during the term of the contract) for the purpose of holding all parties accountable and for focusing the parties upon what precisely has to be achieved. “This tension between the need to fix responsibilities at the outset and the need to readjust them over time permeates the long-term contractual relationship”. (Baird, 1990, p. 586). Whilst data as to the contract terms for the BOOTs was not made available, in the other case studies the contract provided for the adjustment of objectives and targets at specified intervals. The shortest interval between adjustments was 12 months in The Alliance and early alliance case studies, and the longest interval was 4 or 5 years found in the Joint Venture. The 4 or 5 year interval was determined by the duration of the price path set by the independent regulator for different services, providing clear but onerous outcomes in that the steward bears the risk for increases in costs such as labour, energy and chemicals for up to 5 years. The contractual provisions that allow for adjustment at intervals have nicely addressed the tension between the need to fix responsibilities at the commencement of the contract and the need for the parties to have certainty as to what exactly is required of them. This certainty was held by the informants in The Alliance and the Joint Venture to strengthen the sense of responsibility.

Whilst the term of the contract is listed here as it is an incentive to the agent to act with an ongoing sense of responsibility it was also found that the longer term retained the private participants into future years allowing for full accountability for earlier work that has subsequently failed. This line of reasoning would suggest that the longer-term contract would allow both parties to benefit from investment now and in the future, be that in the quality of the infrastructure itself or in the quality of the relationship, one key aspect of which is the sense of responsibility of the agent. The next step then in this line of reasoning is that the term of the contract is a variable that should be considered as to its impact on sense of responsibility and in turn stewardship. Van Slyke (2007, p. 164) summarised the overall proposition of Stewardship Theory as “...that long-term contractual relations are developed based on trust, reputation, collective goals, and involvement where alignment is an outcome that results from relational reciprocity”, then continued the theme of efficiencies for both parties because of less frequently going to market and also

reduced transaction costs because “...each party better understands the others’ motives, actions and signals” (Van Slyke, 2007, p. 165).

The earlier work of Davis et al., (1997, p. 37) had viewed short-term contracts as characteristic of an Agency Theory management philosophy, usually associated with a control-oriented approach motivated to achieve short-term cost control and productivity increases. Davis et al., (1997, p. 33) asserted that the control-oriented approach cannot be sustained in the long term and that an involvement-oriented management philosophy is more likely to be adopted if the longer term-view were taken, in turn being more likely to produce stewardship behaviour. For that reason Davis et al., (1997) concluded “Clearly, the role of a long-term relationship is central to the choice [by the principal and the steward] of the stewardship role” (p. 37). Yet the three case studies in which the agent acted with a sense of responsibility were found to be configured in accordance with Agency Theory prescriptions. Accordingly, the findings from the case studies that longer-term relationships had a strong causal link to the agent acting with a sense of responsibility to the principal are valuable in that they demonstrate that contractual relationships configured in accordance with Agency Theory can achieve stewardship-like behaviours and stewardship of the infrastructure.

In summary, the findings of the four water service case studies demonstrate that the Stewardship Theory tenet that the longer-term contractual relationships are more likely to lead to stewardship behaviour also operates within contractual relationships configured in accordance with Agency Theory.

6.4.4.3 Additional work

The prospect of additional work, either prescribed in the contract or not in the contract but gained from like water services by association with the government entity, was found to be a powerful motivation for the agent private companies to act with a sense of responsibility to the principal. In The Alliance and the Joint Venture and in the single NG Alliance (which replaced the early alliances) the contract provided for additional work such as capital works at the discretion of the principal. In The Alliance the amount of such capital work was so significant that little work remained for further expansion. Similarly in the Joint Venture the evidence was that the amount was unlikely to grow further. In the BOOTs the work within the contract had remained limited to those three sites but the company which operated the two

smaller plants was found to have other significant ongoing contracts with the government entity for other water services.

In respect of the prospect of gaining work from like water services by association with the government entity it was found that the private participants perceived that acting with a sense of responsibility to their case study principal would establish a reputation that would be seen favourably by those like water services. In The Alliance the contract went further, providing that the government entity and the two private companies could provide services to third parties such as other, smaller water services in the name of the government entity. This is now a significant value of work and is prized by the civil engineering private participant which has expanded the usage of its propriety technology through this access to other water services.

This availability of possible additional work as an incentive to companies to act with a sense of responsibility is consistent with the findings of Van Slyke (2007) that public managers used reputation enhancement as a reward (and sanction) for contracted not-for-profit organisations and used their knowledge of the reputation of existing providers as a decision heuristic for awarding further contracts.

In summary, these incentives were integral to the achievement of sense of responsibility on the part of the private company agents. The financial incentives when combined with clear contractual outcomes led to the agent pursuing the goals and objectives of the principal. The relatively long term of the typical water services O&M contract was found to be a substantial incentive to the agent to continually act with a sense of responsibility to the principal. Additional work from the principal was found to be a strong motivator to act with a sense of responsibility, as was the possibility of gaining work with similar government water entities because of the reputational enhancement that can be achieved through performing the current contract with a sense of responsibility.

Chapter 7: Conclusions

7.1 INTRODUCTION

This thesis was triggered by evidence that some privatised critical infrastructures were failing to meet the needs of the public with the private companies acting with self-interest. This thesis concluded that there was a strong possibility that self-interest on the part of the companies was caused by the contractual arrangement between the government entity and the private company being configured in accordance with Agency Theory prescriptions. This thesis concluded that Stewardship Theory offered the potential to guide the configuration of contractual relationships which result in the private company agent acting as steward. However, certain aspects of Stewardship Theory and Agency Theory were underdeveloped, resulting in this thesis expanding the objective of this research to not only evaluate the potential of Stewardship Theory to guide the achievement of stewardship but also to further develop and clarify certain aspects of Agency and Stewardship theories.

The research project has met those objectives, providing a significant contribution to Agency Theory and advancing the understanding of certain aspects of Stewardship Theory. The literature regarding government as principal and private-for-profit company as agent or steward has been extended. The empirical data obtained through the multiple case study approach and analysed by cross-case comparison provided evidence of private companies achieving strong stewardship of critical infrastructures and generated the following key findings:

- the alliance, joint venture and BOOT concession forms of contractual relationships achieved stewardship of the critical infrastructures, with the alliance form being particularly suited to O&M of urban water services;
- Agency Theory assumptions of goal divergence, information asymmetry, the agent being risk averse and agency loss were found to be incorrect in the context of contemporary inter-organisational principal-agent relationships in the urban water industry;

- the behaviour of ‘acting in the interests’ as identified in the seminal work of Davis et al., (1997) is developed further, providing explication of the nature of that behaviour;
- the behaviour of ‘acting in the interests’ was found, contrary to Stewardship Theory assertions, to be present in and supported by Agency Theory contractual relationships configured in accordance with the model (Eisenhardt, 1989) where the concept of goals being in conflict is relaxed.
- the behaviour of modern private-for-profit organisations as steward is defined;
- sense of responsibility to the principal was not found to distinguish a steward from an agent because no case study offered an example of a Stewardship Theory steward and three case studies provided examples of contractual relationships configured in accordance with Agency Theory accompanied by the agent having a strong sense of responsibility to the principal; and
- Agency Theory contractual relationships promote and support the Stewardship Theory pro-stewardship attribute sense of responsibility through a range of factors; factors such as intense measurement, reporting and incentives as have been prescribed by Agency Theory, and other factors such as shared goals, long-term contracts and trust as have been asserted by Stewardship theorists to promote stewardship behaviour.

This chapter proceeds on the following basis: those key findings and other findings that constitute an original contribution to knowledge are set out in greater detail first, then the limitations of the research are laid out, and finally the opportunities for further research are discussed.

7.2 ORIGINAL CONTRIBUTION TO KNOWLEDGE

This thesis provides a contemporary view of the application of both Agency Theory and, to a lesser extent, Stewardship Theory in the context of inter-organisational relationships. The empirical data allowed this thesis to test several Agency Theory assumptions and tenets which were established in the mid-twentieth century and to develop and challenge several aspects of Stewardship Theory. Those

findings, whilst having significant implications for theory, are also highly relevant to practice. This section first reviews the implications for theory and then sets out the implications for practice.

7.2.1 Implications for theory

Both Agency Theory and Stewardship Theory proved to be well suited to the task of unpacking the behaviours in play within the case study contractual relationships. The research has contributed to both Agency Theory and Stewardship Theory in a number of ways, each of which are explained, commencing with those regarding Agency Theory.

Agency Theory assumptions of goal divergence, information asymmetry, the agent being risk averse and agency loss (the principal being able to carry out the task better than the agent) were found to be incorrect in the context of modern inter-organisational principal–agent relationships in the urban water sector. The case studies demonstrated that the typical Agency Theory assumption of goal conflict is incorrect. Specifically, the Agency Theory model where goal conflict is a variable ranging through to shared goals developed by Eisenhardt (1989) was confirmed by case study examples.

The Agency Theory assumption of information asymmetry favouring the agent was found not to be operating in any of the four case studies. All case study contractual relationships achieved information symmetry. The Agency Theory literature was extended by the finding that there was no causal link between information symmetry and stewardship of the infrastructure not being achieved. The finding of Eisenhardt (1989) that information symmetry could contribute to the mitigation of the difference in goals in an Agency Theory relationship was confirmed.

The knowledge as to the causal link between the configuration of the relationship and the achievement of information asymmetry was developed further. Information symmetry in all cases was supported by very specific contractual requirements as to the provision of information by both parties. This demonstrated that in a relationship configured in accordance with Agency Theory information symmetry could be prescribed and achieved. However, this thesis does not purport to generalise these findings to all Agency Theory relationships as the information

symmetry was accompanied by stewardship-like behaviours such as sharing goals and acting in the interests of the principal, such behaviours being contrary to the typical Agency Theory model and highly likely to support and engender information symmetry.

The assumption of the agent being risk-averse (Davis et al., 1997; Jensen & Meckling, 1976) was found to be incorrect in the context of the agent being a for-profit organisation. The organisations as agents had contracted to accept risks that the principal was not prepared to accept. This thesis has now extended the Agency Theory literature by demonstrating the conceptualisation of for-profit organisations as having an appetite for risk generated by their technical competency and financial backing. This development of the Agency Theory literature will assist governments in understanding the opportunities as to the allocation of risk offered by the various forms of privatised contractual relationships when considering how to achieve the best possible stewardship of critical infrastructures.

The agency loss assumption was found to be incorrect in all four water case studies. In each case study the principal had conducted a considered risk process and a private company had been chosen to carry out the work because, by a comparison against the option of in-house service delivery, the agent had been judged to offer greater competency and efficiency. Agency Theory was thus updated to reflect that in the circumstances where the agent is an organisation chosen for its capability it is highly unlikely that there is any agency loss.

The knowledge as to the concept of ‘acting in the interests’ as identified in the seminal work of Davis et al., (1997) was developed further. The evidence led to findings as to how that behaviour manifested itself in the relationships where stewardship of the infrastructure was achieved. This expansion of the knowledge as to this behaviour was particularly important as stewardship of the infrastructure was achieved by contractual relationships configured in accordance with Agency Theory. The evidence was of a highly values-driven approach to the role of agent characterised by partnership, cooperation, coordination and collaboration, and evidence that goals and objectives were shared, providing a rich explication of the stewardship-like behaviour of the organisation as agent acting in the interests of the principal. The conundrum is whether the knowledge of acting in the interests gained from Agency Theory relationships can be applied to Stewardship Theory

relationships. This thesis posits that the knowledge of acting in the interests is fully transferable to a relationship configured in accordance with Stewardship Theory because the behaviour found in the Agency Theory case studies was similar to that conceptualised in Stewardship Theory literature and reported in related empirical studies (Van Slyke, 2007). The findings are highly important as Agency Theory had previously characterised the agent as typically acting against the interests of the principal and Stewardship Theory literature to date (Davis et al., 1997) had not contemplated what constitutes the behaviour of the organisation as steward and the concept of acting in the interests had not been unpacked, nor explained.

Applying the findings from the Agency Theory case studies, this better understanding and explanation of the behaviour that constitutes acting in the interests of the principal was then brought together to provide a definition of the behaviour of an organisation as steward of an infrastructure. Having the concept of steward defined, at least in the context of an organisation as steward, fills the quite unexpected void caused by there being no definition of the individual or organisation as steward in the organisational literature.

In addition, the coverage of Stewardship Theory knowledge is broadened by moving from the focus of previous research upon not-for-profit organisations to explore the behaviour of the for-profit organisation as steward, albeit that no case study was found to be configured in accordance with Stewardship Theory.

This empirical research sought to test the strength of the causal link between the Stewardship Theory pro-stewardship factor sense of responsibility and stewardship behaviour because an examination of the literature (Davis et al., 1997; Hernandez, 2012; Van Slyke, 2007) suggested that, of the various pro-stewardship factors, sense of responsibility was likely to be important, if not essential, to stewardship being achieved. The findings were complex. The relationships in the three case studies where stewardship of the infrastructure was achieved were found to be configured in accordance with Agency Theory and provided evidence of a strong causal link between sense of responsibility and stewardship-like behaviour, leading to the conclusion that the attribute sense of responsibility was ‘highly important’ to stewardship-like behaviour.

The complexity of the operation of sense of responsibility grew when the case studies revealed that sense of responsibility was found to be essential when taking a

perspective not previously taken in the Stewardship Theory literature: that of the principal. The requirements of the principal first emerged from the findings in the case study where stewardship was not achieved, and sense of responsibility was not found — the early alliances. The dissatisfied principal in the early alliances decided to replace the two management contracts with a single alliance, selecting against criteria which equated to sense of responsibility on the part of the new company being essential. Examination of the findings from the other case studies revealed that for principals responsible for critical infrastructures sense of responsibility is essential. As those remaining three case studies achieved sense of responsibility this thesis found a strong causal link between the principals' requirement that there be sense of responsibility and there being stewardship-like behaviour. As the perspective of the principal as to this attribute had not been addressed in the literature to date this thesis has expanded the knowledge of the importance of this attribute.

The practice of selecting agents against the criteria of sense of responsibility was part of a larger body of evidence that led to the finding that sense of responsibility can be possessed by an individual or organisation well before they enter into a relationship. Agency Theory had not contemplated the possibility of the agent acting with a sense of responsibility but rather had characterised the agent as requiring control and incentives to achieve contractual compliance. The Stewardship Theory literature had paid limited attention to the attributes inherent within the steward but rather had focused on how responsibility is engendered within an established relationship (Davis et al., 1997; Hernandez, 2012). The focus by this thesis on the attributes which a candidate steward can bring to the contractual relationship extends the application of Agency Theory and sets a path for the development of the literature, including Stewardship Theory literature, which will benefit those seeking to apply the prescriptions of the theories in practice.

The Stewardship Theory conceptualisation of sense of responsibility to the principal as an attribute internal to the individual, one which can be developed by intrinsic rewards such as trust (Dicke, 2002), was confirmed but also challenged by the finding that extrinsic rewards also engendered sense of responsibility. Extrinsic rewards such as financial incentives (bonuses) in addition to the regular payments, which include an element of profit, additional work and long-term contracts, were found to engender sense of responsibility, which in turn led to stewardship-like

behaviour. This finding was highly important as financial incentives had been held by Agency theorists (Jensen & Meckling, 1976) to modify behaviour to achieve contractual compliance but the nature of this changed behaviour had not been explained. The water service case study findings clearly explicate the position of acting with a sense of responsibility as behaviour that can result from extrinsic rewards such as financial incentives.

The Stewardship Theory tenet that stewardship behaviour, including sense of responsibility, could be engendered within a contractual relationship by structural and psychological attributes (Davis et al., 1997; Hernandez, 2012) was supplemented by the finding that structural arrangements, extrinsic rewards and psychological attributes can also be applied within an Agency Theory relationship to achieve sense of responsibility of the agent. These structural arrangements, for example the mixing of staff from each party to the contract, and the extrinsic rewards, for example incentive payments linked to achievement of KPI targets, will support the practical application of Agency Theory to maximise the sense of responsibility of the agent to the principal.

The case studies revealed actions which increased or supported the sense of responsibility of the agent. The discussion of all the findings as to the importance of sense of responsibility to the achievement of stewardship and how that attribute can be maximised has focused those findings into four groups: i.e. configuration of ownership and governance of the steward entity, ensuring suitable participants, clear contractual outcomes and incentives to private participants. The utility of these findings to practitioners is discussed in the next section of this chapter. The impact of this framework of actions or factors upon Agency Theory is highly likely to be significant in that such lists of practical information built on a foundation of theories are likely to encourage other scholars to conduct related research, building on a part or all of the findings from this thesis.

This direction of this further development of both Agency and Stewardship theories runs contrary to the trend of the Stewardship Theory literature to characterise the two theories as opposed, or at the least as one being the counterpoint of the other and separate. It may be the case that the research technique of contrasting the two theories (Davis et al., 1997; Van Slyke, 2007) across a range of dimensions has led to an unintended normative polarisation. Certainly the findings

of this thesis were that the dimensions of the two theories were intertwined and characterised by much common ground, for example shared goals, and the agent or steward acting with a sense of responsibility to the principal. The concept of there being common ground leads to the possibility that Stewardship Theory presents a 'special case' of the Agency Theory model.

This possibility was given life by Eisenhardt (1989) when she developed typical cases within the Agency Theory model where an individual tenet of Agency Theory, for example goal conflict, is relaxed. This important area of characteristics, dimensions or features shared between the two policies is best addressed by future research. Suffice to say at this stage that the one theory is a complement to the other and that the exploration of Stewardship Theory could not proceed without Agency Theory.

7.2.2 Implications for practice

The research reported in this thesis was carried out because of the significant disputation between parties and unsatisfactory outcomes for the public from some privatised critical infrastructures. For those reasons the researcher was vigilant to ensure that the outputs from this research provide benefit to the community, particularly by being relevant to the needs of practitioners generally, and specifically government and industry who are responsible for achieving better stewardship of critical infrastructures. The key areas where this thesis has identified implications for practice are:

- the additional knowledge as to how each of the four typical forms of privatisation achieve stewardship (or otherwise) of critical infrastructures;
- Agency Theory assumptions as to the behaviour within the contractual relationship have been updated in the context of contemporary government–private company inter-organisational relationships;
- clear definition of the reasonable expectations as to the behaviour of an organisation that is a steward, in particular the concept of acting in the interests of the principal;
- the identification of sense of responsibility as an attribute of an individual or organisation which is highly important, and possibly essential, to stewardship (like) behaviour;

- the provision of examples where principals consider sense of responsibility to be essential and have selected the agent against sense of responsibility criteria; and
- creation of a list of actions or key issues that must be addressed by the principal to support an existing sense of responsibility or to promote such an attribute.

How these contributions are relevant to practice is discussed in the remainder of this section.

The alliance, joint venture and BOOT form of concession as forms of privatisation were found to be configured in accordance with Agency Theory and were characterised by stewardship-like behaviours such as the private company acting in the interests of the government entity, displaying a sense of responsibility to the principal and stewardship of the infrastructure being achieved in each case. An additional attraction of the alliance and joint venture forms of privatisation was that stewardship of the infrastructure was achieved without ownership of that infrastructure passing to the private sector. This feature of these forms of privatisation is highly relevant to governments who must meet the public's expectation that the asset remain publicly owned yet gain the benefits of private sector efficiencies.

Further findings of relevance to practitioners considering the alliance or joint venture forms of privatisation are in the areas of decision-making rules for governance boards, the application of the alliance and joint venture forms to O&M functions, and the perennial issue of the tension between long-term contracts and the progression through the contract term making the original specific outputs irrelevant.

First, the decision-making rules adopted in the alliance and joint venture rejected the traditional hierarchical approach of the principal having the dominant power, but the extent differed. In the alliance, decisions were to be 'best for alliance' and not to the benefit of any one party and decisions were to be unanimous. In the joint venture there was a similar emphasis upon the decision being in the interests of the partnership but the chairman had a deciding vote in the event of there not being a majority vote.

Second, the use of the alliance and joint venture forms of contractual relationship in the infrastructure sector have largely been limited to the design and construction phases which are relatively short-term and have been little used in the O&M phase. The alliance and joint venture provided examples of how those forms can be successfully applied to achieve stewardship, thus expanding the literature on this subject. Third, long-term contracts are characterised by the tension (Baird, 1990) between the need to fix outcomes and outputs at the outset and the need to readjust them over time; this has been addressed in the joint venture and the alliance, with differing degrees of elegance. The joint venture provided an example of the adjustment of payments and KPI targets for each service at the same time as the independent regulator set the price path for customer charges; that is, four or five years. The alliance demonstrated a mechanism comprised of annual adjustment to KPI targets and rebalancing of emphasis upon targets which linked directly to bonus payments paid quarterly. This annual adjustment in the alliance was found to be highly effective in establishing shared goals and engendering a sense of responsibility on the part of the companies; however, the joint venture adjustment at four or five years was criticised by the joint venture as requiring the joint venture to bear an uncomfortably high risk of input cost increases.

These findings as to decision-making rules, the extension of the alliance and joint venture forms regarding the O&M of critical infrastructures and the resolution of the issue of long-term contracts requiring the readjustment of targets over time better inform those considering the options as to ownership and governance of privatised infrastructures.

The consideration of those options will be influenced by the assumed likely behaviour of the parties and this thesis has clarified (and found to be incorrect) the prevailing Agency Theory assumptions which this thesis concluded may have been limiting the outcomes for existing contractual relationships for privatised critical infrastructure. This thesis found that Agency Theory assumptions of information asymmetry, agents being risk averse, and agency loss were incorrect. The normative Agency Theory assumption that the goals of the principal and agent diverge or indeed conflict was found to be incorrect, with the findings being that the model of the Agency Theory relationship where the goals might be aligned or indeed shared (Eisenhardt, 1989) was in operation. In the context of modern inter-organisational

relationships the attainment of information symmetry, the situation where all parties to the contract have sufficient information to carry out their roles efficiently, is highly important to all parties as the inefficiency of additional controls or distrust caused by an information disadvantage is removed and the parties are able to focus on the shared goals. A further example of the benefit of applying the case study knowledge as to Agency Theory assumptions is the finding that agents which are large specialist organisations are not risk averse as asserted by Agency theorists (Davis et al., 1997; Jensen & Meckling, 1976). Armed now with this knowledge of risk appetite this thesis has now extended the Agency Theory literature by demonstrating that for-profit organisations have a distinct appetite for risk generated by their technical competency and financial backing. The more significant extension of the application of Agency Theory in the practical context is that the agent has accepted risk whilst providing stewardship of the critical infrastructure. This is highly important as the findings demonstrate to principals that the allocation of risk to the agent does not prohibit the achievement of stewardship.

Whilst many authors extol others to act as stewards or bestow upon themselves the role of steward the term steward has seldom been defined, leaving many unsure as to what is meant. This thesis has explicated the meaning of ‘acting in the interests’ and built a definition of the reasonable expectations as to the behaviour of an organisation that is a steward. That clear definition will allow parties to better define contractual terms and to communicate between organisations and their staff the concept and responsibilities of the steward.

Having set the expectation of a private company as steward of the infrastructure the government entity is faced with selecting between companies and ensuring that the candidate selected can achieve stewardship. This thesis found that the sense of responsibility attribute is highly important to — possibly essential to — stewardship being achieved. This thesis confirms the Stewardship Theory tenet that sense of responsibility can be engendered within the relationship and also found that sense of responsibility is an attribute that the organisation or individual can bring to the contractual relationship. This is important as principals can select against sense of responsibility criteria. This approach was reinforced by the empirical research finding that for all principals in the critical infrastructure case studies sense of responsibility was essential.

As this thesis has established sense of responsibility as being ‘highly important’ to stewardship it follows then that those practitioners responsible for the configuration and operation of contractual relationships for privatisation will want to know what actions they should take, or issues they should anticipate, to ensure sense of responsibility is maximised. This thesis has assembled the findings under a framework that directs the user to key topics, for example suitability of government and private participants, and incentives to private participants. This framework will allow the practitioner ready access to a particular area of knowledge which includes not only the description of the action or issue, for example the mixing of staff from the participant organisations, but also provides description and analysis of the operation of these arrangements in the specific case studies. This framework of actions and issues offers the prospect of further benefit if further scholarly work was carried out to develop a handbook for use by the broad group of practitioners.

Put simply, having regard to these aspects of the research findings, and the objective of this research of informing the configuration of relationships to achieve better stewardship, Agency Theory and Stewardship Theory are concluded to offer a very strong framework on which a government entity can construct a relationship with private sector providers to achieve stewardship of critical infrastructures.

7.3 LIMITATIONS OF RESEARCH

The limitations of this research derive from the research design and from the data and findings built on that data. The discussion of the limitations of the research methodology is set out in *Section 4.3.4 Limitations of the methodology* and covered two key areas, namely the relative reliability of the research methods chosen and the generalisability of findings attributable to the form of privatisation, having regard to there being only one example of a form of privatisation in each of the case studies chosen. The apprehended issues that had the potential to limit the reliability of the research methods were addressed by building into the research design a number of techniques and controls. However, the major limitation which remained was the reliance upon a single (unaided) researcher for the conduct of the interviews and the treatment of data and analysis of findings. The potential for bias in the conduct of the interviews and interpretation of data were addressed by controls, but the limitation in the design remained and flowed on to become a limitation upon the findings. This thesis acknowledges that the findings and conclusions of this research

should not be taken to have greater reliability than should be given to the work of a single researcher.

The reliance upon four case study water systems and the selection of case studies representing four different forms of privatisation provided a rich range of typical forms of privatisation but in doing so limited the capacity for generalisability of findings based on the form of privatisation. In that way the original aspiration for this research for learnings which could be applied to all critical infrastructures cannot be met. However, the performance of an individual form of privatisation, for example an alliance, as to stewardship is but one aspect of the research and the finding of stewardship by a particular form of privatisation at least points theorists and practitioners in the direction of a possible causal link. Notwithstanding this limitation, the findings had significant commonality across cases studies allowing the research to reach sound findings as to the major foci of the research, namely stewardship and sense of responsibility.

In respect of any limitation emanating from the data the researcher had concerns that the interviews of two informants from one private company was taking 'a snapshot in time' but at that time the government's decision to not further extend the contract with the two companies and their company's decision to not compete for the re-tendered work may have resulted in those informants putting perspectives which represented their immediate reality as individuals but which was not representative of their companies past longer-term relationship with the government entity. This potential limitation was addressed in the original design, for example designing in the opportunity for triangulation with archival sources, informants from the second private company and from the government entity informants. In addition, where the researcher's scepticism could not be satisfied the researcher was circumspect as to the validity of the evidence from the two informants.

A regrettable limitation within the findings came from the full importance of sense of responsibility to the concept of stewardship not emerging until the cross-case analysis of the case study findings. The research design followed the path of the literature and approached sense of responsibility as being a factor which impacted stewardship, and sought to gather data to develop that thread seeking out data on the behaviour and attributes of the agent/stewards. What became apparent after analysis of the findings was that the entity (the principal) responsible for the critical

infrastructure had an independent perspective as to the importance of sense of responsibility, driven principally by the criticality of the water services. The findings were thus limited in two areas. The first was that the exploration of the causal link between the agent displaying a sense of responsibility and stewardship of the system could have been aided by the gathering of data in the interview as to the repercussions if the agent did not display a sense of responsibility. The second was that gathering of data from the government entity decision-makers, for example chair and board of directors, as to their perspective on the twin issues of the importance of sense of responsibility and the agent not acting with a sense of responsibility had not taken place. Given such additional evidence is not available the findings of this research have been set in a cautious manner, determining the causal link to be only 'highly important'.

An intentional boundary of this research was the adoption of the relationship between organisations as the unit of analysis. This approach, of necessity, took the focus of this research away from the behaviour of the individual, an area upon which most of the Agency Theory and Stewardship Theory literatures had concentrated. Whilst there is no limitation inherent in this research it is acknowledged that this research gathered some findings as to the impact of the motivations and behaviours of individuals which contributed to the behaviour of their own organisation or the organisation which they interfaced. Research utilising the individual as the unit of analysis would complement the findings of this research and this opportunity is discussed in further detail in the next section.

7.4 FUTURE RESEARCH

Throughout this thesis the findings have revealed areas where future research would assist in a better understanding of the actual practice of or an aspect of a particular theory. Applying the criteria of providing benefit to the community from future research, five areas arose:

- the stewardship behaviours of both the organisation and its member staff;
- the importance of sense of responsibility on the part of the agent from the perspective of the governing body of the entity responsible for the critical infrastructure and whether that importance varies having regard to the criticality (or not) of the contractual outcome;

- whether sense of responsibility is essential in a causal link sense;
- development of a practitioners' handbook of actions and issues which increase the sense of responsibility of the steward organisation; and
- empirical research into the stewardship achievements of the alliance form of privatisation across a larger sample of critical infrastructure privatisations.

This research adopted the inter-organisational relationship as the unit of analysis yet the findings showed that the motivations, capability and behaviours of the individual contributed to the stewardship-like behaviour (or otherwise) of their organisation or the organisation with which they interfaced. Examples are the dedication to the provision of water services, the capability to effectively work within the particular form of contractual relationship, and collectivist rather than individualistic behaviours (Davies et al., 1997). Research utilising the individual as the unit of analysis would complement the findings of this inter-organisational relationship research by providing knowledge as to the characteristics of the individual who might most effectively work within a particular contractual relationship, for example an alliance.

Having established the preeminent position of sense of responsibility as being highly important, and possibly essential, to the achievement of stewardship, and having found that for principals in the urban water services industry sense of responsibility is essential, this thesis has opened up many questions as to the operation of sense of responsibility. The finding that sense of responsibility was seen as essential by the principals challenged the finding that from a causal link perspective sense of responsibility was highly important to stewardship. There was insufficient evidence gathered from the case studies to support a reliable finding that sense of responsibility was essential. However, a reasoned argument was built that stewardship could not be achieved if a steward did not display a sense of responsibility. As a conclusive answer as to whether sense of responsibility is essential would assist in the focus upon this attribute and in turn upon achieving stewardship it is appropriate that further research on this issue be carried out.

Returning to the finding that for principals in the urban water services industry sense of responsibility is essential, it is important to understand whether all principals

consider the attribute to be essential or whether this perspective does not extend beyond the industry or is dependent upon a variable such as the criticality of the output, for example safe drinking water or safe rail travel. Further research in this area would assist by bringing focus upon the sense of responsibility attribute, and if found to be essential in a particular industry then organisations and individuals can be selected against that criteria and held accountable against that criteria.

In assembling and analysing all the actions and issues which impact sense of responsibility this thesis has established a framework of information which will be invaluable to the broader group of practitioners responsible for configuring the privatised arrangements or indeed achieving stewardship of the critical infrastructure. This thesis has assembled the findings under a framework that directs the user to key topics, for example suitability of government and private participants, and incentives to private participants. This framework will allow the practitioner ready access to a particular area of knowledge which includes not only the description of the action or issue, for example the mixing of staff from the participant organisations, but also provides description and analysis of the operation of these arrangements in the specific case studies. This thesis did not purport to assemble all the available relevant information as to the topic, but rather focused only on the findings emerging from the case studies. Future scholarly activity could build on the framework of actions and issues established by this thesis and provide a handbook which by its advancement of knowledge would lead to better stewardship of critical infrastructures.

The alliance form of privatisation was found to be highly effective in achieving stewardship of the critical water system infrastructure. The NG Alliance in Case Study C, which commenced operation in 2011 adopted many of the features of the Case Study A alliance and indeed many of the features adopted are those acknowledged in the literature regarding typical alliances (Davies, 2008). However, the government entity in the NG Alliance did not adopt all the features of the Case Study A alliance, specifically not making available to its private participant the possibility of significant capital work and not adopting the same KPI target and related financial incentive scheme. The government entity must have made an intentional decision to not introduce this incentive. Thus, these two similar but different examples of the alliance form of contractual relationship, both delivering an

identical output within near identical regulatory regimes, offer a rich opportunity for future research by scholars seeking to understand the nuances of the alliance model. Additional alliance privatisations drawn from other critical infrastructure sectors would increase the sample and support wider generalisability of the findings, and the possibility of understanding the impact of variables prominent in the urban water industry such as the long term of the contract and water industry staff working in the industry for extended periods of time.

This research has been worthwhile if only for the exploration of case studies which demonstrate that organisations inter-relate in much more positive ways than are advocated in normative Agency Theory. Yet this thesis offers much more. The endorsement of models within Agency Theory and the principles advocated in Stewardship Theory as being highly suitable to provide conceptualisations of relationships which can deliver a better stewardship outcome are major achievements and the identification of the pivotal importance of sense of responsibility points practitioners and scholars towards greater focus on this attribute.

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Appendix A

Interview Protocols: Applying Stewardship Theory to Produce Better Stewardship of Privatised Water Infrastructure

David Mills

23 March 2011

Critical infrastructures throughout Australia are increasingly being operated by private companies with mixed results. Some operate to an evolving standard that satisfies the public. Others do not satisfy the public. This research seeks to understand whether particular factors within the relationship between the company and government entity account for the favourable or unfavourable outcome from the relationship.

Specifically the purpose of this interview is to obtain a better understanding of the relationship between Water Systems Manager (WSM) INSERT NAME and government entity INSERT NAME and of whether WSM INSERT NAME acts as a steward for the INSERT NAME water system/water treatment plant/water storage facility. I will ask you a series of questions relating to the relationship with ABC and the decisions and interventions which contribute to the relationship.

Consent Form

Discussion and signature of Consent Form

Interview Details:

Interview Date:

Interview Time:

Location:

Interviewee Details

Interviewee:

Organization:

QUESTIONS

Preamble:

The purpose of this research is to obtain information as to your experience of the performance of Water Systems Manager (WSM) INSERT NAME. The research will seek to identify performance which goes beyond mere compliance with contractual terms.

- 1.1 Tell me an example of a time when WSM acted in the principal's (insert name of government or community) benefit.

Is this typical of how WSM behaves toward the government or community?

Has WSM ever acted against the interests of the government or community?

Can you tell me about a time WSM acted in the government or community's benefit, even when it may have had a negative or detrimental effect for them?

- 1.2 Whose role is it to initiate improvements to the water management system?
- 1.3 What do you understand to be WSM's role in the provision of drinking water? If the drinking water provided was found to be contaminated who would you consider to be responsible?
- 1.4 Are there any examples of any extraordinary events where WSM took the initiative and "went the extra mile"?
- 1.5 If WSM had to choose between cost and protecting your organisation, what choice do you think WSM would make?

Topic 2 – Sense of responsibility

- 2.1 Do you believe WSM carry out agreed work on the agreed terms?
- 2.2 What are the usual positions you observe taken by Water Systems Manager (WSM) INSERT NAME and government entity INSERT NAME in respect of a problem with the quality of the work done?
- 2.3 Please give us your observations as to what Water Systems Manager (WSM) INSERT NAME and government entity INSERT NAME each understand they are responsible for?

- 2.4 Who do you observe WSM INSERT NAME is accountable to? To whom WSM INSERT NAME are the individual executives of WSM INSERT NAME responsible? Who legally? Who in practice?
- 2.5 What is the boundary between what WSM INSERT NAME should do in its role of water systems manager and what is not its role?
- 2.6 What is the one thing that WSM INSERT NAME has done for the government or community which you think it has done really well?
- 2.7 What do you think contributes to the way in which WSM INSERT NAME acts?

Topic 3 – Decisions and interventions which support or prohibit sense of responsibility

- 3.1 If WSM has shown sense of responsibility what do you think contributes to this attitude of WSM?
- 3.2 What do you observe government organisation INSERT NAME do to build that attitude?
- 3.3 Tell me what government organisation INSERT NAME does to improve the relationship between the two organisations?
- 3.4 Tell me about an example of:
 - shared decision-making;
 - interaction and communication;
 - opportunities for growth of size and reputation of WSM.

Interview Close

Thank you for your time. From this interview and other similar interviews I will be able to identify themes around factors which impact upon the outcome from the relationship between the parties that manage privatised critical infrastructures.

I have developed a mailing list of interviewees like yourself and will send you the summarised findings when the research reaches that stage.